

Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Story of the Week Automobiles Aren't Refrigerators

Don't Worry, Mr. Dealer
Progress Depends on
People and Principles
Walt, Homer, Ed, Charlie

Story of the Week

At a White House luncheon Mrs. Eisenhower was handed a note from her grandson.

"Dear Mamie. May I sleep in Ike's bed tonight? David. Sign here. . ."

Delightedly the President's Lady signed—and read the missive aloud to her equally delighted guests.

Automobiles Aren't Refrigerators

You hear a lot of wild talk these days to the effect that eventually the home equipment business will wind up in the hands of five or six giant corporations, "just like the automobiles."

It's a glib suggestion; but on careful examination it doesn't make sense. You simply can't draw a parallel between selling automobiles and marketing the variegated variety of labor-saving devices sold to homeowners.

Compared to the highly complex home equipment industry, automobile merchandising relatively is simple. (Don't shoot, Messrs. Curtice, Colbert, Romney, and Breech! Hear us out, please.)

The automobile industry essentially manufactures one product, which sells for thousands of dollars. Home appliance manufacturers produce many different products, each of which sells for hundreds of dollars.

Their problems, thus, are incomparable. "They are different breeds of cats," as a colorful G-M executive puts it. "Automobile thinking just doesn't work in home appliance marketing. Automobile dealers are dependent on the manufacturer. In home equipment it's just the other way around."

An automobile dealer is tied to one product and one manufacturer. A Buick dealer is a Buick dealer is a Buick dealer. He doesn't sell Fords and Plymouths or Ajax foaming cleanser.

On the other hand an appliance dealer is likely to be anything from a furniture store to a plumber. And, side by side, he will display General Electric, Philco, Gibson, Amana, Lewyt, (Concluded on Page 9, Col. 1)

Drayer To Enter Package Unit Mfg., Readies 5 Lines

LOS ANGELES—Announcing Drayer-Hanson's entry into the field of "packaged" air conditioner manufacturing, Fred E. Schmuck, national sales manager, last week revealed the company is "readying for introduction during the coming year, five complete lines of packaged air conditioning equipment."

"They will embrace every phase of residential, commercial, and industrial comfort conditioning," he said.

Two lines of packaged water chillers will also be introduced in 1957, Schmuck indicated.

The first of the new packaged equipment is expected to be ready for delivery by early spring, prior to peak-season activity.

The entire range of D-H's new products will place emphasis (Concluded on Page 6, Col. 1)

Dealers Win Some Concessions from Mfrs. on Service and Builder Sales

By John O. Sweet

CHICAGO—Closer cooperation between appliance manufacturers and dealers seemed to be developing as some of the major producers—apparently heeding retailer complaints—recently announced or hinted at new or revised policies on servicing, sales to builders, and co-op advertising.

Spokesmen for General Electric and Westinghouse indicated that greater reliance will be placed on servicing by dealers and independent service organizations.

In the last few weeks, three manufacturers—Westinghouse, Whirlpool-Seeger, and General Electric—have made known new builder sales plans.

The Westinghouse policy was the first of the three to be publicly announced. It eliminates any possibility of special builder pricing considerations

which would be detrimental to the appliance dealer, according to a company official.

A little later came an announcement from Whirlpool-Seeger of a new special account contract sales plan with "strong safeguards" for appliance dealers, as well as for contract purchasers such as builders, and distributors.

Then, at the annual convention of the National Appliance & Radio-TV Dealers Association, (Concluded on Page 29, Col. 1)

Whirlpool Offers Dealer Contract Sales Safeguards

ST. JOSEPH, Mich.—A new special account contract sales plan for "RCA Whirlpool" and "Estate" home appliances of Whirlpool-Seeger Corp. "with strong safeguards for appliance dealers, contract purchasers such as builders, and distributors" was announced here by Dwight R. Anneaux, general sales manager, special markets.

Under the plan, to be eligible for special contract sales prices, distributors must show that the individual contract sale involves at least 50 units of one product line or at least 100 units of two or more product lines; that the appliances purchased are either installed by the buyer or are (Concluded on Back Page, Col. 4)

For a look at the present status and future prospects of the heat pump see the special Heat Pump Section on pages 20-27 of this issue.

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Welbilt Keys '57 Program on 'Wall-Slim' Units

MASPEETH, L. I., N. Y.—New "Wall-Slim" room air conditioners of ¾ and 1 hp. capacities—measuring 15½ in. deep at the base—will key Welbilt Corp.'s air conditioner program for 1957, the manufacturer said in announcing the recently introduced line.

A companion line of through-the-wall units labeled "Welbilt-in," of the same dimensions, has also been introduced. The 1½ and 2-hp. models of 1956 are continued unchanged for the coming year, the company noted.

The Welbilt-in air conditioner permits installation of a complete air conditioner with case inside a second outer sleeve. This simplifies installation or removal for service and protects the inner chassis when installed, according to M. W. Morris, vice (Concluded on Page 2, Col. 4)

Say -10° to -20° F. Needed

Varying Temperatures for Frozen Foods Lower Quality, Damage Public Acceptance

MIAMI BEACH, Fla.—The dangers to the industry of allowing temperatures of frozen foods to vary widely during their trip from processor to consumer were painted in stark colors by speakers at the National Frozen Food convention here recently.

"A single package of food goes through many ups and downs of temperature before it is consumed," declared Dr. M. J. Copley of the United States Department of Agriculture Western Utilization Branch at Albany, Calif.

"There are downs in the quality of that food," he warned, "but no ups. Once damage has been done, it can't be undone by kind treatment."

"Letting a package of frozen food get up to a temperature of 25 to 30° F. for just one day is worse than using from a pack more than a year old that has

been kept at a favorable temperature."

He emphasized that during the normal commercial handling period, frozen foods will remain in excellent condition if maintained at 0° F. or below.

Even at this temperature quality changes occur. They would be slower if the product were held at -10 or -20° F., he said.

F. Gilbert Lamb, president of the National Association of Frozen Food Packers, warned, "One thing is sure. No amount of bragging on our part about quality, nutrition, or anything else is going to have any impression on a customer who opens a package of frozen food and finds it in poor condition—obviously thawed and refrozen."

"She will remember what her own experience has been long after she forgets the fancy (Concluded on Back Page, Col. 3)

Cooling Group Has Seminar on Money Making

70 Contractors Attend
Fort Worth Talks on
Improving Firm Profits

By C. Dale Mericle

FORT WORTH, Texas—More than 70 contractors from as far as 250 miles away attended a one-day seminar staged here Jan. 8 by the Fort Worth Air Conditioning Association.

Implied theme of the all-day meeting was "how to make money in air conditioning at the contracting level."

Six contractor and wholesaler members of the Fort Worth association presented talks on credit, overhead, estimating, accounting, and salesmanship—all aimed at showing contractors how their profit picture could be improved.

Discussing the advantages and pitfalls of various types of credit, Paul D. Cato of Texas Refrigeration Supply Co. urged contractors to:

"1. Stop trying to do more business than our capital will permit."

"2. Check up on our cost of doing business so that we will (Concluded on Page 28, Col. 3)

New Conditioners Bow at NAHB Show

CHICAGO—At least three new developments in air conditioning are making their debut here at the 13th annual exposition sponsored by the National Association of Home Builders.

One is a new builder model "Weathertron" heat pump which, General Electric Co. says, is almost half the size and cost of earlier models.

A second is a new line of Westinghouse packaged air conditioners in 16 combinations ranging in capacity from 18,000 to 70,000 B.t.u. in steps of 3,000 (Concluded on Back Page, Col. 1)

Quiet Kool Adds 'Tru-Slim' Series

NEWARK, N. J.—A new series of Emerson-Quiet Kool room air conditioners has been announced by Stanley L. Abrams, president of Emerson-Quiet Kool Corp., a subsidiary of Emerson Radio & Phonograph Corp.

These new 1957 "Tru-Slim" models "incorporate a modern slim and low design which permits true flush mounting and does not obstruct windows," it was stated.

Abrams said the Tru-Slim air conditioner has such sales features as pushbutton controls, automatic thermostat, aero- (Concluded on Page 28, Col. 1)

What's in a name?

QUALITY

...if the Name is

**READING
COPPER TUBING**FOR REFRIGERATION
& AIR CONDITIONING
EQUIPMENT**READING TUBE CORPORATION**EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

Let's talk cents

When you buy a low
temperature system and
check the TOTAL costs of both
the low and high side,
you'll be pleased to find that

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THERMOBANK provides the only positive re-
evaporator with ample heat supply.

THERMOBANK completely protects the com-
pressor — no liquid refrigerant to the com-
pressor, no oil foaming, no motor overload.

THERMOBANK reduces electricity costs, re-
duces compressor requirements, and elimi-
nates electric heaters.

WRITE FOR MANUAL TV-320

KRAMER TRENTON CO. - Trenton 5, N.J.**Welbilt Room Units for '57 -**

(Concluded from Page 1)

president in charge of sales.

The Welbilt-in units are all equipped with thermostatic controls, adjusted louvers, and fresh air intake and exhaust. Three-quarter-horsepower units are available in models including a 7.5-amp. model. The 1-hp. air conditioners are available for 115, 230, or 208 volts. Permanent filters, pushbutton controls, two-speed fans and heaters are available as extra equipment.

"Welbilt-in air conditioners have been specifically designed for in-wall installation so that there is no inside or outside projection for apartment house installation," the company said. "For 8-in. or 12-in. walls the small projection may be either inside or outside, at the option of the builder."

The Wall-Slim units measure



ROOM air conditioners offered for 1957 by Welbilt Corp. are specifically designed for in-wall installation.

26 $\frac{1}{16}$ in. wide, 18 $\frac{7}{8}$ in. high, and 15 $\frac{5}{8}$ in. deep at the base. These dimensions make possible use of the units in double hung windows, casement windows, or transoms, the company said.

They are available in deluxe or custom models. The deluxe $\frac{3}{4}$ and 1-hp. units have thermostat, exhaust, fresh air, replaceable filter, and a rotary type switch.

The custom $\frac{3}{4}$ -hp. model has more capacity than the deluxe and operates on 7 $\frac{1}{2}$ amps, the company explained. It has push-button controls, permanent filter, thermostat, exhaust and fresh air, and two-speed fan operation.

The custom 1-hp. unit has, in addition, an electric heater. Both deluxe and custom 1-hp. units are available for 115-volt operation.

Two new window mounting arrangements are offered with these units. They are a "Speed-E-Mount" for standard double hung windows and a "Porta-Mount" for casement windows or for mounting entirely within the room.

With the Speed-E-Mount, the entire unit can be removed from the window in seconds for storage or service and the window closed.

With the Porta-Mount, one air conditioner can be moved from window to window in its cradle if desired. The Porta-Mount consists of mounting brackets that are secured to the window frame and the cradle into which the unit slides. It is sold as an accessory kit at extra cost.

Recommended retail prices for the Wall-Slim and standard units are as follows:

WALL SLIM			
Model	Description		List
7732	$\frac{3}{4}$ hp., 115 v., Deluxe		\$269.95
7723	$\frac{3}{4}$ hp., 115 v., Custom		299.95
7737	1 hp., 115 v., Deluxe		269.95
7727	1 hp., 115 v., Custom		299.95
7729	1 hp., 230 v., Custom		299.95
7728	1 hp., 208 v., Custom		299.95
STANDARD			
7023	1 $\frac{1}{2}$ hp., 208 v., Custom		399.95
7024	1 $\frac{1}{2}$ hp., 230 v., Custom		399.95
7025	2 hp., 208 v., Custom		439.95
7026	2 hp., 230 v., Custom		439.95

**Air Distribution Topic
Leads Florida U Meeting**

GAINESVILLE, Fla.—Eighth annual air conditioning conference sponsored by the University of Florida will be held here Feb. 7 and 8, it was announced.

Refrigeration engineers, contractors, service and sales representatives are invited to attend and take part.

Topics to be covered include air distribution, residential air conditioning, water treatment, and air-cooled condensers.

Reservations may be obtained through Frank M. Flanagan of the mechanical engineering department, at the university here.

3 Manufacturers Sue For Excise Refunds

WASHINGTON, D. C.—Three air conditioning and refrigeration manufacturers brought suits in U. S. Court of Claims here for excise tax refunds.

Amana Refrigeration, Inc. stated it paid excise taxes of \$4,236,232 for the period from Jan. 1, 1950 through Dec. 30, 1954. Of this, \$255,291 was overpaid, the company charges, since it was the part of the taxes proportionate to the costs the firm had incurred fulfilling warranties on products it sold.

Carrier Corp. claims a refund of \$141,106 proportionate to the expenses it incurred in fulfilling warranties on quick-freeze units and apparatus and air conditioning units between Jan. 1, 1951 and Dec. 31, 1954.

The court ruled in an earlier case that a manufacturer is entitled to a refund of excise taxes proportionate to what it costs it to make good on warranties.

In another case the Court of Claims ruled that Frigidaire Div., General Motors Corp. is entitled to a \$80,994 refund in excise taxes and interest.

Frigidaire also brought suit for \$1,263,951 on refunds it makes to distributors under a local advertising plan. The company bases its claim on the fact that it refunds part of the sales prices to reimburse distributors for money they have spent advertising Frigidaire refrigerators, quick-freeze units, and other products. Between Jan. 1, 1951 and Dec. 31, 1954 it refunded \$15,837,457 to its distributors, the firm contends.

Jervis Corp., refrigerator and stove hardware manufacturer, was denied a \$182,058 refund in income taxes by the same court recently.

Amana Drops Phil Silvers Show—Rising Cost Cited

CHICAGO — Amana Refrigeration, Inc. is dropping its every-other-week sponsorship of the Phil Silvers CBS network TV show, and is scheduling the largest magazine and newspaper advertising program in its history in 1957.

That was the report made by George C. Foerstner, Amana executive vice president, at a press conference here. Foerstner also reported that 1956 was Amana's biggest year in both sales and growth.

The increasing cost of the network TV show, which was getting to the point of taking nearly three-quarters of a \$4 million annual advertising budget, plus the feeling that the show was reaching primarily a "repeat" audience, were the primary reasons for dropping the TV sponsorship, Foerstner explained.

Amana will return to TV sponsorship, he said, when and if it fits in with the company's advertising and promotion plans.

To Condition Clinic

MOBILE, Ala. — Ground has been broken on Pleasant Ave. for Mobile's Rotary Foundation Diagnostic Clinic and Rehabilitation Center, a \$900,000 project. The one-story building will be completely air conditioned.

Dairy Industry Supply Meeting To Draw 450

WASHINGTON, D. C.—Representatives of nearly 450 American and Canadian dairy supply and equipment firms, members of Dairy Industries Supply Association, will gather at the Shoreham hotel here March 14 and 15 for the association's 38th annual meeting.

An opening luncheon March 14 will be followed by a busi-

ness session devoted to panel discussions on the biennial Dairy Industries Exposition, which is sponsored by the association. The annual banquet and election of directors is set for that evening.

India To Cool Hotel

NEW DELHI, India—To cope with the ever-increasing flow of foreign visitors to New Delhi, the Indian Government will construct a nine-story fully air conditioned \$4.2 million hotel.

System Design To Highlight I-B-R Short Course Jan. 28

NEW YORK CITY—Design and selection of combination heating and cooling systems for year-round comfort will highlight the mid-winter I-B-R heating-cooling short course to be held Jan. 28-31 at the University of Illinois.

This tenth short course is sponsored jointly by the Institute of Boiler and Radiator Mfrs. and the university.

House Unit Reports Bill To Cut Out Components Tax

WASHINGTON, D. C.—Retained in a report by the House Ways and Means subcommittee on Excise Taxes was the provision in the bill calling for the elimination of the tax on refrigerator components.

However, in the report, the subcommittee refused to recommend elimination or reduction of Federal manufacturers' excise taxes on appliances, radio, TV.

count to ten...

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IF THERE'S
ROOM FOR YOUR HAND,
THERE'S ROOM FOR
AN ALCO 402

- 1 Liquid charge—valve mounts at any angle.
- 2 Pressure-limiting element prevents motor overload.
- 3 Reverse seating gives smooth feed at all loads.
- 4 2-20° F. superheat adjustment fits standard service wrench.
- 5 Adjusting stem seal cap.
- 6 Capillary at side allows more head room in mounting.
- 7 Rugged forged brass body takes long, hard use.
- 8 Removable strainer can be cleaned in 2 minutes.
- 9 Standard wrench flats on inlet and outlet.
- 10 Compact construction—minimum of internal parts.

Choose from these convenient models:
 Freon-12— $\frac{1}{4}$, $\frac{1}{2}$ and 1 ton
 Freon-22— $\frac{1}{4}$, $\frac{1}{2}$ and 1.6 tons
 Methyl-Chloride— $\frac{1}{2}$, 1 and 2 tons

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CHECK THIS LIST FOR YOUR NEAREST AUTHORIZED BRUNNER SUPPLY HEADQUARTERS

ALABAMA
BIRMINGHAM.....Budlock Refrigeration Supply Co.
MOBILE.....Refrigeration Supply Co.
MONTGOMERY.....Nolin-McInnis Company

ARKANSAS
FORT SMITH.....Central Supply Company
LITTLE ROCK..Refrigeration & Electrical Supply Co.

ARIZONA
PHOENIX.....Authorized Supply Company
PHOENIX.....State Equipment & Supply Co., Inc.

CALIFORNIA
BAKERSFIELD.....Refrigeration Supplies Distributor
EAST LOS ANGELES.....Arrow-Risco, Inc.
EL CENTRO.....Allied Refrigeration Suppliers, Inc.
FRESNO.....California Refrigerator Company
GLENDALE.....Arrow-Risco, Inc.
LONG BEACH...L. B. Marsh Allied Refrigeration Co.
LOS ANGELES.....Arrow-Risco, Inc.
LOS ANGELES.....Brea Supply Company
LOS ANGELES.....Thermal Products, Inc.
OAKLAND.....California Refrigerator Company
SACRAMENTO...Acme Supply & Equipment Company
SAN BERNARDINO.....L. B. Marsh Allied Refrig. Co.
SAN DIEGO.....Allied Refrigeration Suppliers, Inc.
SAN FRANCISCO...California Refrigerator Company
SAN FRANCISCO...Refrig. & Power Specialties Co.
SAN GABRIEL.....Arrow-Risco, Inc.
STOCKTON....Refrigerating & Power Specialties Co.

COLORADO
DENVER.....Thermo Supply Company

CONNECTICUT
HARTFORD.....N. W. Day Supply Company
HARTFORD.....Joseph Simons Company
NEW HAVEN.....Resco, Inc.

DISTRICT OF COLUMBIA
WASHINGTON.....Refrigeration Supply Co., Inc.

FLORIDA
JACKSONVILLE.....Bowen Refrigeration Supplies Inc.
JACKSONVILLE.....Refrigeration Supply Company
MIAMI.....Bowen Refrigeration Supply, Inc.
ORLANDO.....R & R Supply Company, Inc.
PENSACOLA.....Cooling & Heating Supplies
TAMPA.....Hajoca Corporation
TAMPA.....Leo S. Bosarge Co. of Tampa, Inc.

GEORGIA
ATLANTA.....Leo S. Bosarge Company, Inc.
ATLANTA.....Bowen Refrigeration Supplies, Inc.

COLUMBUS. S.....Hajoca Corporation
MACON.....Graves Refrigeration, Inc.
SAVANNAH.....Savannah Refrigeration Supply Co.

IDAHO
BOISE.....Commercial Distributing Company

ILLINOIS
CHICAGO.....Service Parts Company
DECATUR.....Potter Supply Company
EAST ST. LOUIS.....Illinois Electric Works, Inc.
PEORIA.....Polar Supply Corporation
ROCKFORD.....Park Distributors, Inc.
SPRINGFIELD.....Spangler, R. H. Company, Inc.

INDIANA
EVANSVILLE.....Budlock Refrigeration Supply Co.
EVANSVILLE.....Ohio Valley Hardware Company, Inc.
INDIANAPOLIS.....Duncan Supply Company
MISHAWAKA.....Valley Equipment Company
RICHMOND.....Gennett & Sons, Inc.
TERRE HAUTE.....Budlock Refrigeration Supply Co.

IOWA
CEDAR RAPIDS.....Thermal Company, Inc.
DES MOINES.....Thermal Company, Inc.
DAVENPORT.....White Refrigeration Supply, Inc.

KANSAS
TOPEKA.....Refrigeration Equipment Company
WICHITA.....Refrigeration Equipment Company

KENTUCKY
LEXINGTON.....Brock-McVey Company
LOUISVILLE.....Mill Industrial Supply, Inc.

LOUISIANA
ALEXANDRIA...The American Supply Company, Inc.
BATON ROUGE.....Acme Refrigeration
LAFAYETTE.....Cooling & Heating Wholesalers
LAKE CHARLES.....Temtrol Supply, Inc.
MONROE.....Thermal Supply
NEW ORLEANS.....Nola Sales Company, Inc.
SHREVEPORT...Standard Brass & Manufacturing Co.

MAINE
PORTLAND.....A. E. Borden Company, Inc.
PORTLAND.....Joseph Simons Company

MARYLAND
BALTIMORE.....Roche & Hull, Inc.
SALISBURY.....Roche & Hull, Inc.

MASSACHUSETTS
BOSTON.....A. E. Borden Company, Inc.
SPRINGFIELD.....C. P. Payson Company, Inc.

MICHIGAN
ALPENA.....J. Geo. Fischer & Sons, Inc.
DETROIT.....J. Geo. Fischer & Sons, Inc.
DETROIT.....Young Supply Company
GRAND RAPIDS.....Harris Supply Company
JACKSON.....J. Geo. Fischer & Sons, Inc.
KALAMAZOO.....Harris Supply Company
LANSING.....Harris Supply Company
PONTIAC.....Young Supply Company
SAGINAW.....J. Geo. Fischer & Sons, Inc.

MINNESOTA
MINNEAPOLIS.....Thermal Company, Inc.
ST. PAUL.....Thermal Company, Inc.

MISSISSIPPI
JACKSON.....Paine Supply Company
MERIDIAN.....Motor Supply Company, Inc.

MISSOURI
KANSAS CITY...Refrigeration Equipment Company
ST. LOUIS.....Mechanical Supply Company
ST. LOUIS.....R. H. Spangler & Company, Inc.
SPRINGFIELD.....John A. Rhodes Company

NEBRASKA
LINCOLN.....Wickham Supply Company, Inc.
OMAHA.....White Refrigeration Supply, Inc.

NEVADA
LAS VEGAS.....L. B. Marsh Allied Refrigeration
RENO.....Acme Supply & Equipment Company

NEW JERSEY
AVON-BY-THE-SEA.....Wallwork Brothers, Inc.
NEWARK.....Tesco Distributors
NEWARK.....Wallwork Brothers, Inc.
NEW BRUNSWICK.....Tesco Distributors
OCEAN GROVE.....Tesco Distributors
TRENTON.....Jaegers Sales & Service

NEW MEXICO
ALBUQUERQUE.....McCombs Supply Company, Inc.

NEW YORK
ALBANY.....R. D. Marshall & Company, Inc.
BROOKLYN.....Excel Refrigeration Supplies, Inc.
BUFFALO.....W. A. Case & Son Manufacturing Co.
BUFFALO.....Jordan Supply Company
ELMIRA.....Brady Supply Company
MOUNT VERNON.....Eastern Supply Company
NEW YORK.....Aetna Supply Company
NEW YORK.....Albert Hofeld, Inc.

FOR FAST DELIVERY OF BRUNNER AIR CONDITIONING
AND REFRIGERATION CONDENSING UNITS OR PARTS

**186 Brunner authorized
supply headquarters... coast-to-coast**

BRUNNER
SINCE 1906

WHOLESALE

Every Brunner Wholesaler listed below maintains an authorized supply headquarters for Brunner units and parts. No matter where you are, there's a nearby Brunner Wholesaler who can furnish Brunner Refrigeration and Air Conditioning Condensing units or parts on short notice.

Here's the fastest, most complete distribution service in the industry. Delivery comes from your wholesaler. No long wait for units or parts to come from the factory.

All warranty details... both on Brunner-Metics and Open-Type Units... are handled by your wholesaler. He's equipped to give you or your customer prompt warranty service, without red tape.

Brunnerize for dependable refrigeration and air conditioning distribution service.

Brunner Manufacturing Company, Utica, New York

The Brunner Company, Gainesville, Georgia • In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ontario

NEW YORK.... Reese & Long Refrig. Products, Inc.
NEW YORK.... Paramount Electric Supply Company
ROCHESTER.... Ontario Metal Supply, Inc.
SYRACUSE.... Empire Refrigeration Supply Co., Inc.
SYRACUSE.... W. A. Case & Son Manufacturing Co.
UTICA.... Vaeth Electric Company

NORTH CAROLINA

ASHEVILLE.... Hajoca Corporation
CHARLOTTE.... Bowen Refrigeration Supplies
CHARLOTTE.... Henry V. Dick & Company
DURHAM.... Hasco, Inc.
GREENSBORO.... Hasco, Inc.
RALEIGH.... Noland Company, Inc.
RALEIGH.... Henry V. Dick & Company, Inc.
WILMINGTON.... Henry V. Dick & Co.
WILSON.... Noland Company, Inc.
WINSTON-SALEM.... Hasco, Inc.

OHIO

AKRON.... Davey Sales Company
CINCINNATI.... Mason Supply Company
CINCINNATI.... Mutual Manufacturing & Supply Co.
CLEVELAND.... Cleveland Hermetic & Supply Co., Inc.
COLUMBUS.... Mason Supply Company

OKLAHOMA

OKLAHOMA CITY.... Jones-Newby Supply Company
OKLAHOMA CITY.... M & V Supply Company
TULSA.... Jones-Newby Supply Company

OREGON

PORTLAND.... Refrigerating & Power Specialties

PENNSYLVANIA

ALLENTOWN.... Larson Supply Company
ERIE.... W. A. Case & Son Manufacturing Company
ERIE.... Erie Refrigeration Supplies
HARRISBURG.... Resco, Inc.
PHILADELPHIA.... Acar Supply Company
PITTSBURGH.... Orr, Inc.
PITTSBURGH.... Proie Brothers, Inc.
READING.... Larson Supply Company
SCRANTON.... Central Service Supply Company
WILKES-BARRE.... Radio Service Company

RHODE ISLAND

PROVIDENCE.... A. E. Borden Company, Inc.
PROVIDENCE.... Rhode Island Refrigeration Supply Co.

SOUTH CAROLINA

COLUMBIA.... H. V. Dick & Company
GREENVILLE.... Henry V. Dick & Company

SOUTH DAKOTA

SIoux FALLS.... Thermal Company, Inc.

TENNESSEE

CHATTANOOGA.... Peglar's, Inc.
MEMPHIS.... Budlock Refrigeration Supply Co., Inc.
MEMPHIS.... R. H. Spangler Company, Inc.
NASHVILLE.... J. B. Thomas Company

TEXAS

ABILENE.... C & H Distributing Company
BEAUMONT.... Coburn Supply Company, Inc.
CORPUS CHRISTI.... S. Texas Refrig. Supply Company
DALLAS.... Barbeck Refrig. Supply Company, Inc.
DALLAS.... Central Engineering & Supply Company
EL PASO.... M & M Refrigeration & Electrical Supply
FORT WORTH.... Texas Refrigeration Supply Co.
HARLINGEN.... United Supply Company
HOUSTON.... Johnson Supply Company
HOUSTON.... Lingo Company, Inc.
HOUSTON.... Standard Brass & Manufacturing Co.
LUBBOCK.... R & R Refrigeration Corporation
SAN ANGELO.... Central Electric Company
SAN ANTONIO.... United Supply Company
SAN ANTONIO.... Westbrook Company
TYLER.... Amstan Supply Division
WACO.... Texas Refrigeration Supply Company

UTAH

SALT LAKE CITY.... Commercial Dist. Company

VERMONT

BURLINGTON.... The Blodgett Supply Company, Inc.

VIRGINIA

BRISTOL.... Southern Refrigeration Corporation
NEWPORT NEWS.... Noland Company, Inc.
NORFOLK.... Noland Company, Inc.
NORFOLK.... Refrigeration Suppliers, Inc.
ROANOKE.... Southern Refrigeration Corporation

WASHINGTON

SEATTLE.... Refrigerating & Power Specialties Co.
SPOKANE.... Wakefield Supply Company
TACOMA.... Refrigerating & Power Specialties Co.

WEST VIRGINIA

CHARLESTON.... Mason Supply Company
HUNTINGTON.... Mechanical Refrigeration Supply Co.
WHEELING.... Mason Supply Company

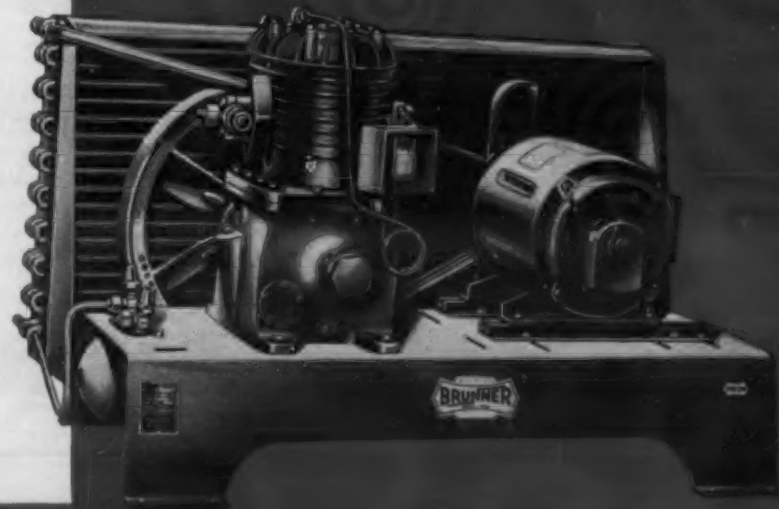
WISCONSIN

MADISON.... B. T. U. Equipment & Supply Corp.
MILWAUKEE.... Thermal Company, Inc.



Brunner-Metic semi-hermetic condensing units for every commercial refrigeration application... from 1/4 H.P. through 3 H.P.

A complete line of Open-Type Condensing Units... full range of types and sizes... from 1/4 H.P. through 100 H.P. Brunner makes it easy to choose the right unit for every refrigeration and air conditioning job.



D-H To Make Packaged Units--

(Concluded from Page 1) sis on durability. Unit flexibility, plus pleasing design and color blends are other sales appeals being stressed in the developmental process, it was stated.

One line will be a six-model series of packaged air conditioners, basically for commercial applications, consisting of 7½, 10, and 15-ton units.

Features will include oversize blowers for quiet performance, cleanable air filters, and water-cooled condenser with finned tube coil construction.

Matching plenums are to be supplied as accessory equipment. Other accessory will be the option of either hot water or steam heating coils, to give complete heating applications.

Foregoing series will also in-

clude models with a condensing section for applications in residential work as furnace cooling add-on units.

Another key line of commercial and residential types will be 2, 3, and 5-ton packaged units, complete with matched coil, condenser, and compressor units, and pre-wiring. Free blow or duct models, air cooled or water cooled, comprise this line. Manufacturer says four simple connections will make unit fully operative. Pushbutton controls will give "easy-reach" accessibility.

A third line of "packaged" air conditioners for commercial applications are to be ceiling-suspended, self-contained units in 2, 3, 5, and 7½-ton capacities. Included are models for visible

installation, or remote, using ductwork.

The Drayer-Hanson spokesman indicated that, "considerable engineering emphasis has been applied here to eliminate condensation and noise problems."

A further series for industrial and large commercial applications is a line of packaged air conditioners with water-cooled condensers. Capacities: 7½ hp.-60 hp.

In that same range of capacities, Drayer-Hanson will also introduce a line of packaged air conditioners consisting of compressor, and conditioners, and an attached, matched, evaporative condenser, as components.

Completing the company's move to the field of complete packages will be two types of water chillers.

One group, complete with

compressor, chiller, and condenser, is being engineered to cover a wide range of leaving water temperatures, temperature drops, and tonnage ratings. Range is from 7½ hp. to 75 hp. Factory-complete shipment will be made.

The second series, featuring nine models, with capacities from 7½ hp. to 75 hp. will have evaporative condenser attachment.

An important feature will be option of separate shipment of evaporative condenser as detached unit for remote installation in the field.

To Condition Bldg.

ST. LOUIS—Falstaff Brewing Corp.'s new four-story and basement office building at 5050 Oakland Ave., scheduled for completion by late summer, will be completely air conditioned.

Mooney Team Maps Polio Drive In Cooling Field

NEW YORK CITY—Mark E. Mooney of Typhoon Air Conditioning Co. met with his committee at a luncheon conference at the Ambassador hotel recently where plans for a forceful fund drive on behalf of the 1957 March of Dimes campaign covering the entire air conditioning industry were mapped. Mooney is chairman of the Air Conditioning Div. of the campaign.

His committee members are: Robert M. Price, AIR CONDITIONING & REFRIGERATION NEWS; Morris Firestone, Typhoon Air Conditioning Co.; V. A. Bianculli, Syska & Hennessy Inc.; C. W. Egbert, York Corp.; George L. Hickey, Jr., Brunner Mfg. Co.; Fred Asselmeyer, Refrigeration Service Engineers Society; Louis J. Wachs, Carrier Corp.; Edmund G. Seergy, Typhoon Air Conditioning Co.; and Albert Giannini, Carrier Corp.

Objective of the division's polio appeal is to raise a fair share of Greater New York's \$3,000,000 goal as part of the National Foundation For Infantile Paralysis program, it was pointed out.

Wall Named Gen. Mgr. As Servel Promotes 3

EVANSVILLE, Ind. — Three executive appointments at Servel, Inc. were announced by Duncan C. Menzies, president.

John H. Wall, executive vice president and general manager of the Home Appliance Div., has been appointed general manager of Servel, Inc.

Arthur A. Pieper, who has been controller since last March, has been elected vice president in charge of finance to succeed William H. Schrader, who has resigned. Harold J. Luke, formerly assistant to the vice president in charge of finance, has been promoted to treasurer and assistant secretary of the firm.

Large Electric Firms Form McGraw-Edison

CHICAGO — Formal completion of the merger between McGraw Electric Co. and Thomas A. Edison, Inc. was announced here immediately following the new year.

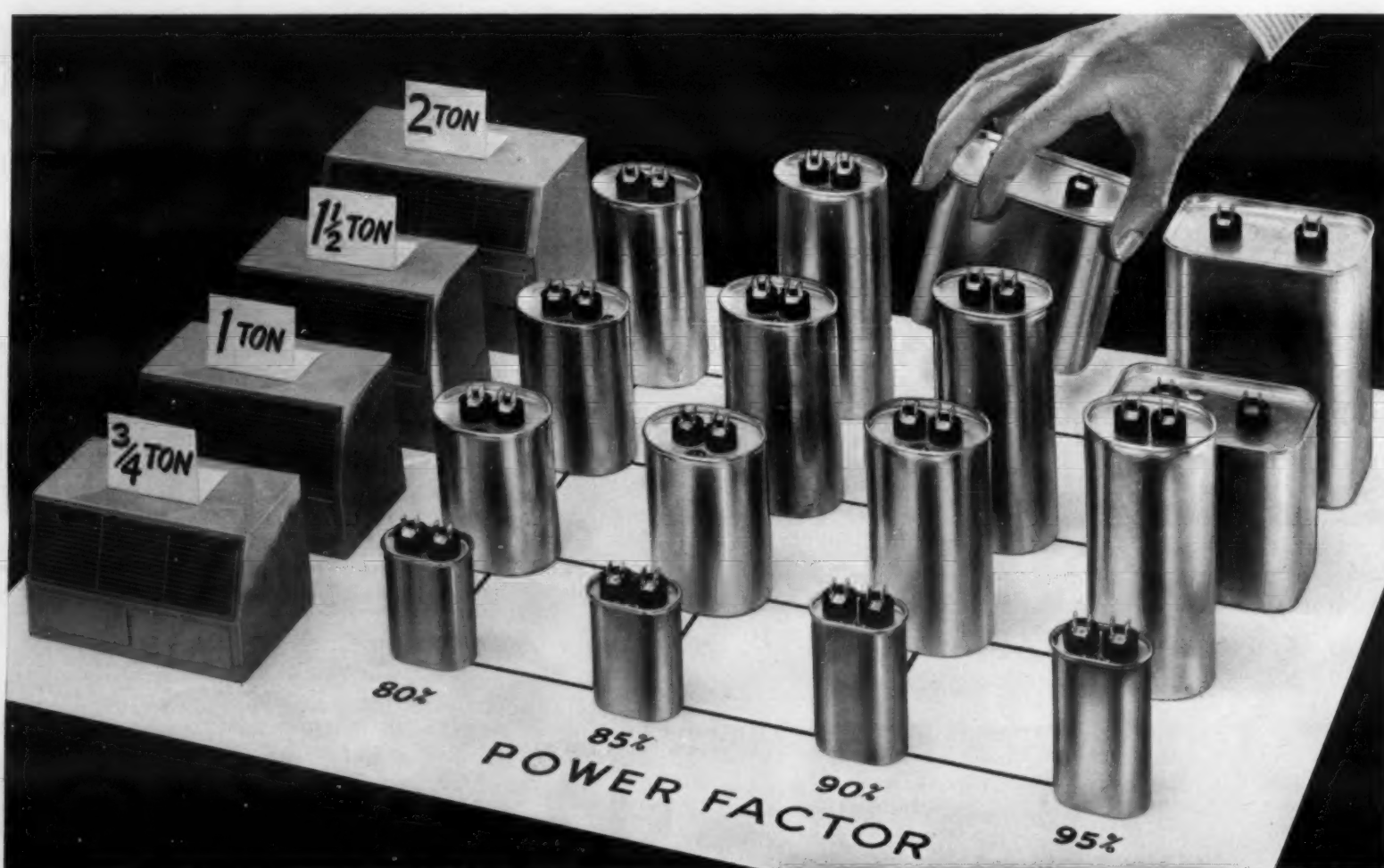
Max McGraw will be president and chief executive officer of the merged concern which will be known as McGraw-Edison Co.

Charles Edison, son of the inventor, will be board chairman of the giant firm which has 23 divisions and subsidiaries in the U. S. and Canada, each of which retains its name and identity and organizational structure, it was explained.

Included are Lonergan Cooler Div. and Tropic-Aire Carrier Div.

Shareholders of Thomas A. Edison, Inc. gave final approval to the merger plan in late December just prior to the time McGraw Electric holders also voiced approval.

McGraw-Edison products include virtually every type of electrical appliance and equipment for home and industrial use, it was reported.



Full range of General Electric capacitors enables you to meet all power-factor requirements for all room conditioners

TAKE YOUR CHOICE OF G-E CAPACITORS, designed and rated for next season's air conditioners

10 REASONS FOR USING G-E AIR CONDITIONING CAPACITORS



NOW YOU CAN GET the capacitor that is exactly right for your latest model air conditioner. No matter what rating you are building for next season, there is a newly designed General Electric Pyranol® capacitor ready for you.

OUR ENGINEERS HAVE DESIGNED higher rated capacitors at minimum increases in case height to help you meet your critical space requirements. This valuable space in room coolers has been saved by increasing capacitor ratings without increasing capacitor base dimensions.

GENERAL ELECTRIC CAPACITORS can also help you meet the new Underwriters' Laboratory running current limitations, and utility power-factor requirements. Your G-E Sales Engineer has the training and experience to help you solve these special problems concerning power factor and optimum capacitor space utilization.

JUST CONTACT YOUR LOCAL General Electric Apparatus Sales Office. Or write for Bulletin GEA-5895, "Capacitors for Air Conditioning Equipment," to the General Electric Company, Section 442-31, Schenectady 5, New York.

*Registered trade-mark of the General Electric Co.

Progress Is Our Most Important Product

GENERAL  ELECTRIC



Al Wirick, Manager of Manufacturing

ARE YOUR COMPRESSORS BEING BUILT HERE?

Our compressor manufacturing facilities located here in Evansville, Indiana, are among the best in the world.

To begin with they're big—over 360,000 square feet of floor space. They're modern and house the very latest in machine tool equipment—precision grinders, for example, that grind to tolerances of one-tenth the thickness of a human hair, honing equipment to hone cylinder bores to 1/10,000 of an inch, a hospital-clean assembly room where temperature and humidity are controlled to within plus or minus one degree throughout the year.

But machines and physical plant are only part of

the story. Of equal importance is manpower. Our labor force is particularly well staffed with skilled, well-trained people boasting long experience in refrigeration work.

In short, we're organized, staffed and equipped to build compressors that are outstanding for maximum capacity, dependable service, long life . . . and to deliver them on time. Give us your requirements. We will be happy to quote you prices and delivery on hermetic compressors and condensing units ranging in capacity from 1/4 to 7 1/2 H. P.

Neither this division nor the parent company—

Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio—has any connection with appliance manufacturing. Bendix-Westinghouse is a joint subsidiary of Bendix Aviation Corporation, Detroit, Michigan, and Westinghouse Air Brake Company, Wilmerding, Pennsylvania. EVANSVILLE DIVISION, EVANSVILLE 11, INDIANA.

SEE OUR EXHIBIT: Booth N301, International Heating and Air Conditioning Exposition, Chicago. February 25—March 1

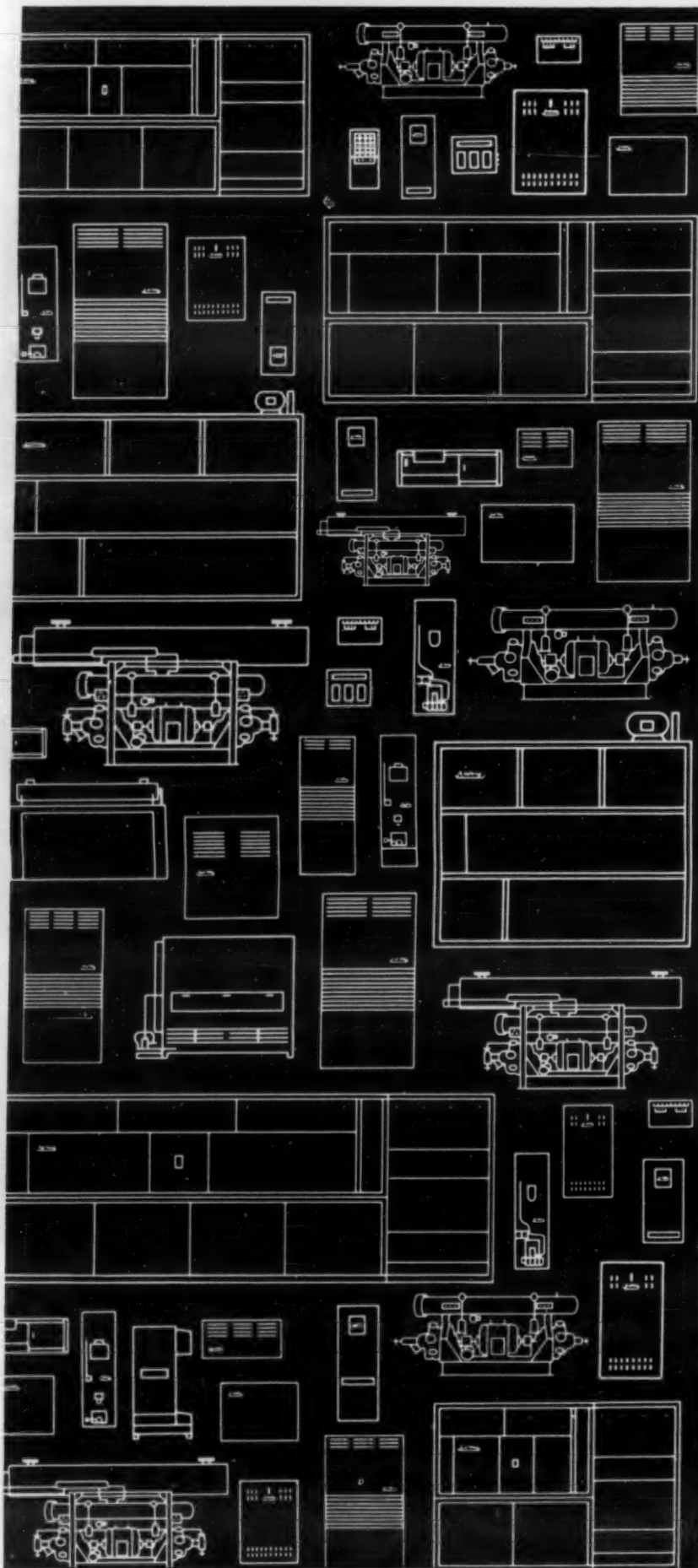
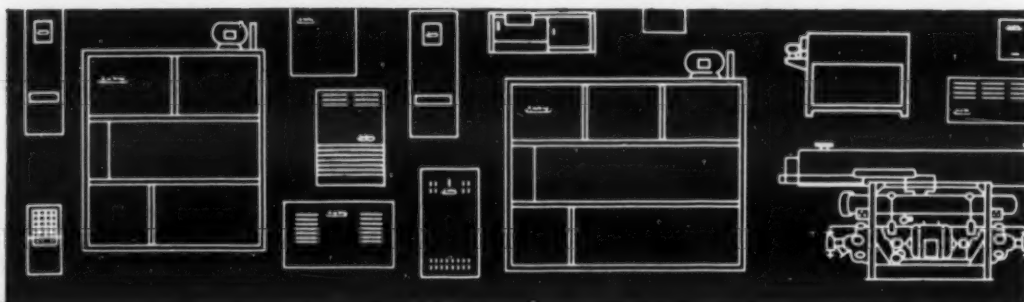
EVANSVILLE DIVISION of

Bendix-Westinghouse

Automotive Air Brake Company

For more information about products advertised on this page use Information Center, page 18.

Sweep Forward
with **CHRYSLER**



OPPORTUNITY

knocks **286** different ways
for **AIRTEMP DEALERS**

286 models—the most complete selection in the industry—enable AIRTEMP dealers to meet every home and business need.

Whether your customer wants superbly engineered heating or cooling—central systems...waterless or water-cooled "packaged" cooling... room air conditioners... furnaces alone or cooling added to present furnaces—Airtemp dealers have *Chrysler-engineered* equipment with which to make the sale!

The BIGGEST LINE in the industry...

*Now Backed by the
BIGGEST AIRTEMP MERCHANDISING EVER!*

Big full-page, full-schedule advertising in the top magazines! *PLUS* important, new prospect-getting campaigns—special promotions—and a whole array of other tested merchandising aids.



*A Specialized Division of
CHRYSLER CORPORATION,
Devoted Exclusively to
AIR CONDITIONING*

YOU, TOO...

can join the sweep forward! Mail this coupon today for details on Airtemp franchise opportunities!

AIRTEMP DIVISION, Chrysler Corporation
Dayton 1, Ohio

Gentlemen: Please rush full information on the Airtemp franchise!

NAME _____

ADDRESS _____

CITY _____

ZONE _____ STATE _____

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1) and other competing products, along with Handi-Dandy goat butter churns and whatnot.

Partly because of this difference in marketing, and partly because the stakes are higher financially, the automobile business is compressing into five or six firms—with General Motors, Ford, Chrysler, American Motors, and Studebaker-Packard the probable survivors. But you can bet your bottom dollar that the same situation won't be repeated in home equipment.

Don't Worry, Mr. Dealer

Although G-M, Chrysler, and American Motors produce both automobiles and home equipment, there's no reason for local refrigeration dealers to fear that the automobile industry will absorb them or chase them out of business. Those two businesses are separate and different, even if related corporate-wise in a few instances.

Take American Motors for instance. Nash is concentrating on the Rambler market, in which it has little automotive competition, whereas A-M's Kelvinator division is expanding all over the map.

Last year American Motors appliance division racked up the greatest sales gains and profits this long-time-in-business firm has enjoyed since 1950. Mark you: that achievement came in a year when several of its competitors had troubles, and at least three appliance manufacturers gave up the ghost.

There must be a reason. And there is, as we shall see.

Progress Depends on People and Principles

Genuine progress depends on right principles and right-minded people. Those most respected men in our industry, who build customer satisfaction and long-term corporate reputation, aren't afflicted with that insidious disease known as Annual Financial Statement Psychosis.

They team for the future, rather than squirm for momentary advantage.

Such men aren't so much concerned with temporary gains as they are with permanency of acceptance by the buying public, stable relations with their suppliers and vendors, and with continued solvency for their stockholders.

That's why it's a pleasure to note that the Kelvinator division of American Motors, which has been following these policies for a long, long time is enjoying excellent profits currently, and that its trade relations are at an all-time peak.

Surely said situation is more than a coincidence. Furthermore, it should be an inspiration to other so-called "independent" manufacturers and dealers. Everything isn't falling into the laps of the great combines.

"One reason I like to do business with those fellows," an Indiana dealer told us recently, "is that I can count on them being there. I work with the same high-minded men year

after year. I trust them because they do right by me, and because they have treated me fairly for years. Newcomers who want to steal the franchise send out new faces too often. I can't decide whether to trust them or not."

That statement of Belief and Trust, we submit, is a chief reason why this independent manufacturer has done so well. It has been dealer-minded. Furthermore, it has kept good men, fellows who've followed sound "dealer first" principles for a long, long time.

Walt, Homer, Ed, Charlie

Take Walter Jeffrey, vice president and general manager. He has been with Kelvinator continuously since 1930. There isn't a man in our business better liked or more respected. B. A. Chapman, executive vice president in charge of the appliance

division, joined this company in 1937. Vice President Charlie Lawson entered the picture in 1939, after a distinguished career with General Motors.

Homer Travis, vice president in charge of sales, was initiated into the fraternity in 1943. Previously he had wooed and developed dealers over a 15-year period, and dealers still swear by him instead of at him. H. A. Valencourt (manager of wholesale distribution), is a 17-year veteran who enjoys nationwide friendships.

General Sales Manager Ed Barnes entered the "I've Thought of a Better Way" portals in 1936, and has steadily acquired a loyal following "in the trade" by sticking to that fundamental principle, to wit: the Dealer is King.

Advertising Manager Bill Saylor has been a stalwart for more than 20 years—and, like his fellow executives—has held with

distinction a variety of posts from product manager to director of public utility relations. This charming gent probably invented "low pressure selling." At least, he personifies it.

Over on the commercial refrigeration side, Harry Patterson has been on the job for 20 years, and contract sales manager C. H. Herrlich precedes him in seniority! Bob Alexander, Johnny Ammel, Don Carter, and "Red" Haight are youthful old-timers, also. Ask anyone in our business how they stand, and you'll get a flattering answer.

All up and down the line this Job Security extends. Dealers appreciate it, because it means security for them, also.

Another good reason they've been so successful is that they don't believe in the mass distribution shibboleth (the more outlets you have, the more sales you will make). This wrong-way

theory—prevalent with TV outfits—has been shown up to be inefficient today.

Additionally, distributors and dealers find it unfair. Too many of them are dipping into the same pot.

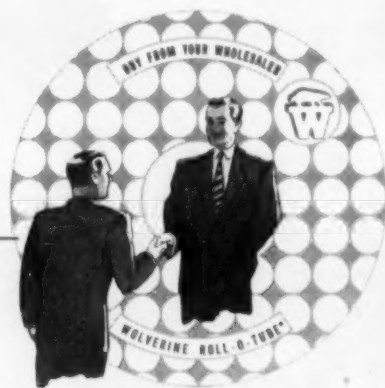
In contrast, Walter Jeffrey's goal is to strengthen his carefully chosen distributors and dealers by giving them sufficient territory and incentives to achieve profitability and a feeling of security. If they can make money consistently, Jeffrey figures, so will the parent company. Truly, it has worked.

Also, we hope, this example will reassure dealers, distributors, and contractors allied with smaller independent manufacturers that corporate giants have scant chance of squeezing them out of the home equipment business.

The Independent is here to stay.

This advertisement describes a wholesaler—who he is, what he does. It first appeared in January, 1952. Over 1,500,000 times each year—via trade ads, direct mail, literature, etc., Wolverine hammers home the magic "Buy From Your Wholesaler" phrase.

WHAT'S A WHOLESALER?



At the end of every production line rises the greatest single responsibility of business—the profitable distribution of a product. So important is this responsibility that men all over the world dedicate their minds, money, voices, hands, eyes, ears, noses, nerves, and sometimes their very lives to its fulfillment.

As a group these men are termed "Salesmen", "Representatives", "Agents" and "Reps". They are called other things frequently.

So intent are they on marketing their products successfully, and so dire are the consequences if they don't that they solicit the help of one of the most singularly important influences in the distribution cycle—the wholesaler.

The wholesaler has been known as a "Jobber", "Distributor", "Dealer" and smiles more often when called a wholesaler than by any other name.

He is linked to reputable manufacturers by supply, to their salesmen by merchandising, to his family by love, his employees by loyalty and to his customers by outstanding service and friendship.

He places more orders, receives more merchandise in greater variety, stocks and re-

stocks more shelves, makes more shipments in less time, holds more confidences and credit across longer counters with a larger capital investment in a smaller area than does either his suppliers or his customers.

Every day he dispenses more information on a wider variety of products than is provided in the literature furnished him. It is taken from years of experience and is added to the knowledge of the craftsmen who are his customers.

The wholesaler can be counted among the members of leading associations, civic groups, fraternal orders, religious societies, country clubs and bowling leagues. His divergent interests compel him to be up early and out late. His favorite but rare relaxations are found at home, on vacation, with a fishing rod or behind a bird dog; at a card table and over a cup of coffee with Joe around the corner.

The wholesaler is not typically a small businessman, neither is he a tycoon; rather he is a well established, highly regarded commercial institution; sincere, practical, reliable; and on his shoulders rests the production lines of tomorrow—profitable distribution today.

CALUMET & HECLA, INC.

CALUMET DIVISION
WOLVERINE TUBE DIVISION
FOREST INDUSTRIES DIVISION
GOODMAN LUMBER COMPANY
CALUMET & HECLA
OF CANADA LIMITED
CANADA VULCANIZER AND
EQUIPMENT COMPANY LIMITED

WOLVERINE TUBE

Division of Calumet & Hecla, Inc.

1413 CENTRAL AVE., DETROIT 9, MICH.

Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.
EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK 18, NEW YORK.

RESTOCK
WITH
WOLVERINE
ROLL-O-TUBE®

THE ONLY ROLL OF TUBE WITH REEL VALUE

For more information about products advertised on this page use Information Center, page 18.



Which ice is best for your prospects?

That depends on their business. For instance, cubes and crushed ice are best for most bars and restaurants. Chip ice is the choice of many diners and luncheonettes. Supermarkets usually want flake ice for their display cases. But no matter what kind of ice a prospect wants you can depend on this: a Carrier ice machine can supply it! Cubes, crushed, flaked or chips... you've got them all when you sell Carrier, the most complete line on the market. What's more, only Carrier supplies you with the sales-closing power of Certified Capacity—ice production guaranteed in writing.* Isn't it time you called your Carrier Distributor?

Or write Carrier Corporation, Syracuse, New York.



*All ice productions listed on opposite page achieved with 70-degree water and 90-degree air.

For more information about products advertised on this page use Information Center, page 18.



Icemaker; 187 lb. daily
100 lb. bin



Icemaker; 187 lb. daily
160 lb. bin



Icemaker; 187 lb. daily
100 lb. bin



Icemaker; 187 lb. daily
160 lb. bin



CUBES? Four Icemakers (above and below) can supply cubes to prospects in the amount they need. Offer simple, trouble-free operation and exclusive jet-action cleaning. Compact Icemakers take up little more floor space than a household refrigerator.



CRUSHED? Any Carrier Icemaker (above and below) can be equipped with a factory-installed crusher for crushed ice in three grades. Can produce 100 pounds of cubes and crushed ice for about 15¢ worth of water and electricity. Saves a good 80% on ice bills!



Icemaker; 410 lb. daily
160 lb. bin



Icemaker; 410 lb. daily
240 lb. bin



Icemaker; 410 lb. daily
160 lb. bin



Icemaker; 410 lb. daily
240 lb. bin



FLAKES? Advanced design of Carrier Flakemasters (below) eliminates rotary refrigerant or water seals. Ice is sub-cooled to last longer. Model on left also available in air cooled version with 850 lb. capacity. 2000 lb. machine is water cooled only.



CHIPS? Only Carrier Chipmasters (below) make chips, the new multi-purpose ice. Chip ice is tops for drinks, adds sparkling eye appeal to foods. Always crystal clear, easy to scoop, easy to pour, never freezes into lumps. Air or water cooled units available.



Flakemaster; 1000 lb. daily
500 lb. bin



Flakemaster; 2000 lb. daily
500 lb. bin



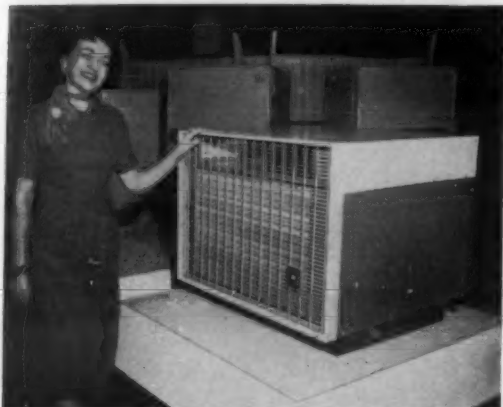
Chipmaster; 450 lb. daily
250 lb. bin



Chipmaster; 500 lb. daily
250 lb. bin

What Was New At the Winter Marts

Pictures on this and the following page are of products shown at the Winter Marts. For further information on these products, use Key Number and the "Information Center" blank on page 18.



—KEY NO. G-1320—
DRESSED UP condensing unit for remote applications wins the admiration of Dawn Callaghan in the Whirlpool-Seeger Corp. exhibit. It is available in 2, 3, and 5-hp. sizes.



MITCHELL USES WOOD

FOR SHIPPING
ROOM AIR
CONDITIONERS

Chicago Mill's hinged corner plywood containers are the most practical for the safe, economical shipping of room air conditioners.

LOW IN COST

ELIMINATE
HIDDEN DAMAGE

STACK 20 HIGH
IN STORAGE

QUICKLY ASSEMBLED



You can be sure that recommendations from Chicago Mill are based on impartial, unbiased decisions because we manufacture the most diversified line of shipping containers in the country. . . .

USING — Plywood — Craveneer — Corrugated — Veneer — Sawed Material IN THE FOLLOWING TYPES — Cleated — Hinged — Nailed — Wirebound Boxes & Crates.

FREE — Illustrated catalog showing the various types and applications of Chicago Mill containers, and the services available to our customers.

CHICAGO MILL AND LUMBER COMPANY
33 South Clark Street Chicago 3, Illinois

Plants at: Helena, Arkansas Greenville, Mississippi Chicago, Illinois
Tallulah, Louisiana Rockmart, Georgia



—KEY NO. G-1321—
SHORTIE FREEZER that puts 18 cu. ft. of storage space in a unit only 55 1/4 in. high is shown off for Manitowoc Equipment Works by Rhonda Sherwood. She says it will store 625 lbs. of frozen food in a 36 by 31-in. floor space.



—KEY NO. G-1322—
FORE AND AFT VIEWS of 3/4-hp. "Wall Slim" air conditioners by Welbilt Corp. shows how the units would look installed in a window or through the wall



—KEY NO. G-1323—
SHOWING OFF Frigidaire's CVW-200 residential air conditioner with 2-ton coil added to a 105,000 B.t.u./hr. oil furnace is model Pat Lau.



—KEY NO. G-1324—
WHAT'S BEHIND the fancy front on Gibson room air conditioners was revealed to Mart visitors in the lower of these two units mounted on a compact display stand.



—KEY NO. G-1325—
FLANKING A DISPLAY OF new Westinghouse "Streamliner" room air conditioners that measure only 16 in. deep are Jan Runyard (l.) and Mickey Blair urging Mart visitors to watch the Westinghouse "glove test."



—KEY NO. G-1326—
KELVINATOR ROOM AIR CONDITIONER line can be shown in a single, compact display, Jean Beacham demonstrates at the Marts.



—KEY NO. G-1327—
ATTRACTIVE DISPLAY of Amana's deluxe room air conditioner is talked up by Ed Lyon, director of air conditioner sales for Amana Refrigeration, Inc. (l.) to Harry Birch of Birch Distributors, Columbus, Ohio.

AIR-CONDITIONING CONTROLS in Allen-Bradley

**WATERTIGHT
and
WEATHERPROOF
ENCLOSURES**

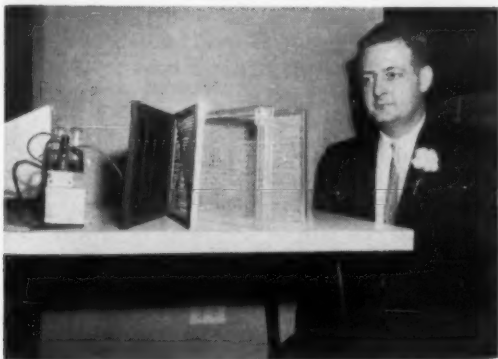


When air-conditioning and refrigeration controls are installed in wet locations, or where corrosive or explosive atmospheres are present, sealed enclosures and fittings are necessary to assure trouble free service. No matter what operating conditions must be met, the correct enclosure is listed in the Allen-Bradley Handy Catalog. Write for this data book—today!

Allen-Bradley Co.
1313 S. First St., Milwaukee 4, Wis.
In Canada—
Allen-Bradley Canada Ltd., Galt, Ont.

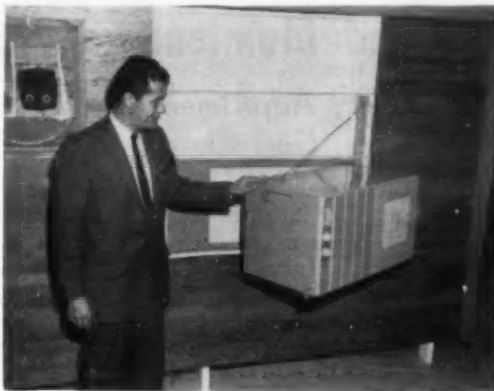


What Was New



—KEY NO. G-1328—

ALL COMPONENTS OF Philco's "Ionotron" air purifier are spread out by Harold Woodruff of Philco's air conditioning division. Air flows from right to left through an aluminum dust trap filter, an Ionotron charger, another dust trap, and finally through an activated charcoal odor stop.



—KEY NO. G-1332—

BUILT WITH THE WINDOW WASHER in mind, this hinged rig demonstrated by Hal McCoy, room air conditioner field sales specialist for O. A. Sutton Corp., swings the room cooler away from the window so that the window can be easily washed. If desired the window adapter can be removed by undoing two screws. The window will close behind the adapter.



—KEY NO. G-1333—

FOCUSING ATTENTION on the Philco refrigerator line, Joan Kagann poses with the model 1478 combination two-door unit with freezer on the bottom.



—KEY NO. G-1329—

NARROW DEPTH of Coolerator "Profile" room air conditioners is emphasized in these ¾-hp., 7½-amp. plug-in units.



—KEY NO. G-1330—

THE BUILT-IN RANGE that requires no remodeling is what Western-Holly Appliance Co. calls this colorful "Kook-Center." It features a ventilating fan, fluorescent lights, stainless steel shelf, automatic cooking clock, thermal eye heat control, built-in rotisserie in the oven, and other conveniences all in a single unit.



—KEY NO. G-1331—

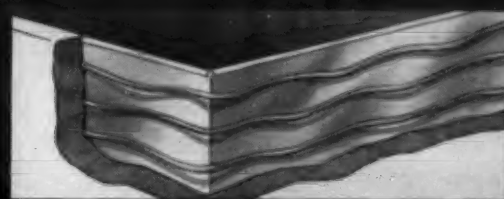
CASEMENT WINDOW MODEL in General Electric's Deluxe Thinline room air conditioner series pulls 7½ amps. in the ¾-hp. size and 115 volts in the 1-hp. size, notes Marilyn McCartney.

For more complete data on products on these pages please use the "Information Center" blank on page 18. The regular What's New section will be found on pages 18 and 19. When requesting more information on these items refer to Key Number, which accompanies each picture.

BOHN ALUMINUM TUBING PROVEN MOST EFFICIENT FOR CHEST-TYPE FREEZERS . . .



- softer . . . easier to form
- makes more positive contact with more of the freezer liner
- costs less . . . reduces weight



THE OLD WAY

Other tubing is harder to form . . . tends to bow and lose contact with the freezer liner.



THE BOHN WAY

Bohn Aluminum Tubing turns corners easily, hugs the freezer liner in more positive contact.

Thousands of freezer installations by America's leading refrigerator manufacturers have proven . . . a switch to aluminum tubing can save you from 2.6¢ to 12.3¢ per foot . . . in some cases with upwards of 7% increased efficiency. In addition, because aluminum tubing is softer, more workable . . . it hugs the freezer liner . . . has more positive contact . . . supplies quicker, better freezing action. Let Bohn's engineers help you produce more efficient freezers at less cost . . . with *aluminum* tubing.

FREEZER PLATES
UNIT COOLERS
EVAPORATORS
CONNECTORS
TUBING
COILS



SALES OFFICES: Boston • Chicago • Cleveland • Dayton • Detroit • Indianapolis • Milwaukee • Minneapolis • Moline • New York • Philadelphia • Rochester • St. Louis

ALUMINUM AND BRASS CORPORATION

DETROIT 26, MICHIGAN

For more information about products advertised on this page use Information Center, page 18.

Cooling Systems Contract Service and Maintenance Plans

Most Common Provides Inspection, Cleaning, Adjustment, Permits Service Firm Better Allocation of Man Hours, Cuts Chance of Loss

DETROIT—Among the various types of refrigeration contract service or maintenance programs being offered today, there are four main types, and the one to be selected by the user of the refrigeration system will depend on his particular situation.

That was the general conclusion of the discussion of "Contract Service and Maintenance Programs" presented before the recent convention of the National Association of Practical Refrigerating Engineers here by Guy R. King, instructor, Vocational Div., Santa Monica City College, and vice chairman of NAPRE's Educational Committee.

King's discussion was of special interest because it touched on phases of contract service from the standpoint of both the service company, and the user who might purchase such an agreement.

The designation of the four "types" of programs are King's own, derived from studies he has made of those actually in use. Some service contractors furnish only one type of program, while others may supply as many as three different types of programs.

TYPE 1 SERVICE CONTRACT OR 'AGREEMENT'

Sometimes known as a "Service Contract," it may also be called a "Maintenance Contract" or "Preventive Maintenance Contract," and sometimes the word "agreement" is used instead of "contract."

Equipment covered by such a contract is most commonly checked monthly. Sometimes the checking is done bi-monthly. The following is some of the work done on these check-up calls:

- Oil all open-type motors.
- Check all temperatures, and adjust controls or control valves where necessary.
- Check controls and clean points where necessary.
- Check operation of all evaporators and adjust expansion valves when necessary.
- Check belt tension, and adjust belts when necessary.
- Check frost conditions; modify defrost cycles when necessary.
- Check refrigerant charge.
- Clean air-cooled condensers.
- Clean spray nozzles, screens, and pans on evaporative condensers or cooling towers.
- Inspect door gaskets and hardware; adjust if necessary.
- Any parts or supplies used are billed at regular rates, and any labor or extra service calls

over and above that specified in the contract are charged for. Thus this Type 1 is fundamentally an inspection, cleaning, and adjustment program, and it should be understood that it is nothing more.

Methods of charging for this Type 1 contract vary according to the circumstances, King explained. Some service firms have a fixed charge per visit. This generally applies to relatively small systems that use low-pressure refrigerants.

At the other extreme is an involved rate schedule based on the number and size of each major piece of equipment, with additions for each expansion valve and control device in the system. In the more complicated

contracts, a method of setting charges may be for an experienced member of the service firm to visit the system, and estimate the time necessary to make the proper inspection and adjustments.

According to King's findings, this inspection and adjustment type of contract is the most common in use. With no maintenance man employed by the user, it provides the necessary routine checking and cleaning, and will often catch larger troubles before they become serious. It can be likened somewhat to the lubrication job and checkup given in automobile service.

From the standpoint of the refrigeration service organiza-

tion, says King, it is a desirable type of service. It enables the firm to spread out the routine service over the year and cuts the winter slack, and permits better allocation of their man hours.

If the job is satisfactory, the firm is on the ground floor for any additional service or new equipment that might be required. There is not as great a hazard or chance of financial loss as there is in some of the other more complicated types of contracts.

There can be a problem for the service company that "oversells" this Type 1 program, giving the customer the idea that it will prevent breakdowns or any large service charges.

From the customer's point of view, the main fault with the Type 1 program is that much can happen between the regular inspection visits, and he is taking somewhat of a gamble on

the whole proposition as a form of insurance.

In almost all instances, billing for the Type 1 contract service is in advance. It may be monthly, quarterly, or bi-annually. This serves to give the service organization a steadier, year-round income.

TYPE 2 SERVICE CONTRACT

In the Type 2 Plan, the same periodic inspection is furnished as in Type 1. In addition, all labor for any and all repairs necessary are furnished at no additional charge. This includes extra service calls at any time required. The customer is still charged for all parts and supplies used.

With this plan the customer pays a fixed, known fee for the labor involved, and takes his chance with the parts, and thus represents insurance against excessive labor costs in the event

(Concluded on next page)

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Contract Service, Maintenance--

(Concluded from preceding page) to build up against excessive service charges.

Some customers favor this plan because it partially stabilizes their service costs, while not being as expensive as complete protection, King points out. Anything which stabilizes such fluctuating costs is an aid to the customer in his planning, budgeting, cost analysis, and even in tax payments.

The customer must recognize that it is not complete protection, but rather a calculated risk with the hope that there will be no trouble requiring expensive equipment replacement.

Costs for the Type 2 Contract can be estimated by the various methods outlined for Type 1. The charges must cover all estimated service requirements plus a contingency fund

While many service companies do a satisfactory job with this Type 2 contract, King says that others have found it the least satisfactory of any type of contract service plan.

Big problem with it is that some customers expect the labor they contract for to keep obsolete equipment running. The customer tends to hold back on the purchase of any new parts, and this puts an excessive burden on the service firm.

When it refuses to renew the contract, the customer is likely to cry that he had paid for an insurance type of service when the equipment was new, but now when he needs it, the service organization is backing out.

"The customer expects and demands too much" and "too

much argument and loss of goodwill" are some of the statements made by proprietors of service firms who have dropped this type of agreement.

TYPE 3 SERVICE CONTRACT

The Type 3 program provides the service and protection of Type 2, plus all parts and supplies except motors and compressors. Charges must be higher not only to make provision for the replacement of an estimated average amount of parts and supplies such as valves, controls, and refrigerants, but to build a fund to take care of those systems where more than average replacements are necessary.

This plan is a compromise between the cost of the partial protection provided by the Type 2 program, against the higher costs of absolute protection. It offers the benefit of greater stabilization of costs.

For the service organization it is a safer plan than an "absolute coverage" program, because in the latter plan, despite large payments to build a contingency fund, a serious accident involving something like a complete compressor breakdown could seriously affect the financial condition of a service company.

TYPE 4 SERVICE CONTRACT

This program provides "complete" or "absolute" coverage for all labor and material.

To the customer such a program can be considered as "insurance" as well as a guaranteed fixed charge for maintenance and repair costs. However, King says it must be remembered that insurance is only as dependable as the organization backing it.

Such programs are usually offered only by well established service contractors, and in some

instances by national suppliers of refrigeration equipment. It is not a program to be sold by a newly-established service firm or one that does not have a solid financial foundation.

While it offers complete coverage against any defects or breakdown resulting from normal causes, like most insurance policies the service company will not make good damage caused by riot, insurrection, warfare, or criminal negligence.

How are charges set up for this type of service? King says that most of the leading operators selling such contracts have developed their own formulas for charges, based on the size and complexity of the plant.

One method of approach for a service firm that is considering offering the Type 4 "complete" coverage program is to bring together its records of service on plants of similar size and complexity, and average them over a period of years, preferably for the life of the equipment. Modifications must be made for changes in labor and all other costs, and possibly for different makes of equipment.

This should provide the cost data for a particular service organization to do the job, regardless of much or how little it might cost some other firm, and provides about the only sound base on which a company can set up charges on which it can make a profit, King states.

From the standpoint of the user of refrigeration who is considering the purchasing of a service maintenance contract, the decision will depend upon the size of the plant and the amount of "insurance" that the user decides to buy.

For the quite small systems a Type 1 Plan is often selected, partially because it is cheapest, and partially because even service companies believe it is best for the small system.

For those users who want to consider the "insurance" type programs (Types 2, 3, or 4) the question is: how will such a plan affect costs, and how hard would a bad breakdown hit the company financially? It is a problem for management to work out for itself, after getting all the available information from the service company.

(To Be Reprinted)

To Condition Bank

NEW YORK CITY—Irving Trust Co. announced that a contract has been awarded to Turner Construction Co. for the installation of air conditioned branch office banking facilities at 400 Park Ave.

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Sell new 1957 comfort-engineered Packaged Air Conditioners

The franchise with the future! Right now, not next spring or summer, is the right time to step into the wide-open, growing air-conditioning business.

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Most modern units on the market! 1957 American Blower Packaged Air Conditioners are all-new, and tastefully styled to blend with any décor. There are sizes to fit any commercial job: 3 ton to 20 ton; install with ductwork or handsome plenum section. And you offer a 5-year factory warranty on the refrigeration circuit—a big American Blower sales-maker!

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Colorful sales-promotion material! You get a complete sales package for prospecting by mail and at point of purchase; product-line folders, wall posters, direct-mail pieces, envelope stuffers, sample sales letters, customer brochures—a big American Blower sales-maker!

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For more information about products advertised on this page use Information Center, page 18.



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VOLUME 80, No. 3, SERIAL No. 1,452, JANUARY 21, 1957

**AUSTRALIAN CABINETS
SIMILAR TO AMERICAN**

R. Evans & Co. Pty. Ltd.
Hobart, Tasmania, Australia
Editor:

We were pleased to get your letter a few days ago reconfirming that we are still subscribers to AIR CONDITIONING & REFRIGERATION NEWS.

It is with pleasure I write, as we very much appreciate the all round help and encouragement your leading articles are to the Industry. Even in this far away country.

We are always interested to get your paper, and note your remarks on present and future trends of the industry, and things in general affecting us all.

Some 18 months ago we started getting into Frozen Food Displays, and now doing good business in all types of open top self-service cabinets.

Ice cream makers are having a second lease on life, as packet chocolate ice cream sales are up 400%, as they are now visible in glass top deep freeze counters.

The illustrations of your deep freeze counters are closely noted, and our Australian made jobs, appear to be very similar in every way.

R. EVANS, Director

**TAKES EXCEPTION TO
NAME, BUT NOT TASTE**

Pacific Gas & Electric Co.
San Francisco, Calif.

Editor:

First, a word of praise. I have been an avid reader of your column "Inside Dope" as well as other features in AC&R NEWS. Frequently I reprint one of your jokes, with credit of course, in our customer magazine P. G. and PROGRESS.

The column on Australia was most interesting and informa-

tive. Having visited that continent as a Naval officer during World War II, I have only the highest admiration for its wonderful people.

May I offer a slight correction? Your correspondent referred to a succulent dish known as Oysters Kilpatrick. I am sure that this has a San Francisco origin where, at the Sheraton-Palace, it is known as Oysters Kirkpatrick. It bears the name of a chef at the Palace who, years ago, concocted the dish.

At any rate, Kilpatrick, or Kirkpatrick, San Francisco or Melbourne, the oysters still taste good.

LAWRENCE R. McDONNELL,
Editor

**UA LOCAL 801 HAS
APPRENTICE PROGRAM**

Refrigeration, Air-Conditioning,
and Oil Burners
Local No. 801, AFL-CIO
Boston 16, Mass.

Editor:

In your Dec. 10 issue containing the report of the RACCA Convention in Florida the statement was made that the United Association did not have any apprenticeship program for air conditioning and refrigeration.

We wish to qualify that statement by stating unequivocally that Local 801 of the United Association has and has had an apprenticeship training course accepted by the Commonwealth of Massachusetts for the Refrigeration, Air Conditioning Trade since Aug. 1, 1954. The related training covers all refrigeration and air conditioning systems in every phase, including construction, service, and maintenance with both pneumatic and electric controls emphasized.

We hope that this letter will help to correct any misunderstanding as to the full meaning of the published statement.

B. A. CAMERON,
Business Representative

They'll
Do It
Every
Time

by

Jimmy
Hatlo

**Automation Is Posing A
Totally New Sales Problems**

America's progress, it is generally agreed, will depend much more upon SELLING than on production in the next dozen years.

Our making-things challenge we have solved handsomely. The subsequently-needed growth of salesmanship, however, is a problem which will require creative thinking on the part of our most brilliant citizens.

To be sure, inventive minds have been at work today, yesterday, and last night trying to solve the quandaries of selling the output of America's augmented factories.

Why do we still have to cope with these problems, then? Because America's small-town inventors—and corporate laboratories—continually are converting the abstract thinking of "pure" scientists into fantastically attractive consumer stuff for you and your neighbors.

Like, for example, the heat pump.

And here is another BIG REASON why salesmen are becoming more and more important in this Age of technological miracles. AUTOMATION possibly will create the greatest dilemma of all time for marketers. Try this stop-and-thinker for size:

Automation may force consumer goods manufacturers and distributors to eliminate seasonal curves, in self-protection.

Why? Their enormously expensive automation machines can't be run economically if they must pause for any appreciable length of time.

Selling consumer goods as fast as automated factories can roll it out continuously comprises possibly the topmost challenge

corporate investors and managers ever have faced.

That's a large reason why sociological philosophers (motivation research experts) are in the spotlight nowadays.

Everysize corporation will need such business philosophers—men who have the patience and experienced background to relate consumer psychology to corporate needs—in the near future.

The motivation researchers, whose only interest is PEOPLE and the latter's desires, frequently are rough on "sacred cows." The customers, motivation researchers reaffirm an obvious truism, are the real Bosses!

"Business philosophers" in the recent past have been recruited from college professors. The latter's star is waning, however.

More recently, semi-retired elder consultants and financial-page newspaper editors, who have had unparalleled opportunities to study kindred problems of many industries, and who've acquired a broad understanding of practical marketing and distribution policies, have been recruited for these motivation research staffs.

Unfortunately a dependable economics laboratory isn't in existence today. Lacking such an economics laboratory, naive theorists and refugees from academic circles have misadvised businessmen too often.

Hence, the trend is away from college professors, and toward business-experienced professional consultants, for SELLING and Public Relations advice.

Automation could turn into regimentation and eventual communization if salesmen are ignored in this newest of the Industrial Revolutions.

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ARI Issues Standard

Compares Points of Water, Refrigerant Flow Capacity as Drier Evaluation

WASHINGTON, D. C. — A new standard for testing and rating driers for use in the liquid line of refrigeration and air conditioning systems has been issued by the Air-Conditioning & Refrigeration Institute to provide a means of determining water capacity and refrigerant flow capacity of a liquid-line drier at specified conditions.

"While the new standard (ARI 710-56) does not attempt to reflect complete performance of a drier, nor to establish standards of dryness for a given desired system, it does establish comparison points with respect to water capacity and refrigerant flow which provides a means of drier evaluation," the institute said.

ADEQUATE LIQUID LINE DRIER CAN BE CHOSEN

"ARI Standard 710-56 discards the possibility of any relationship between the amount of water entering, or requiring removal from, a given refrigeration system and the size of that system, but sets forth that 'knowing the amount of refrigerant charge, and the assumed 'wetness,' the total water content can be calculated. A liquid-line drier of adequate water capacity can then be selected after giving proper consideration to the drier's refrigerant flow capacity.'"

The standard covers driers using solid dessicants (as distinguished from liquid anti-freeze solutions) designed for use in the liquid line (as distinguished from driers used in the suction line or low side) of all types of refrigeration and air conditioning systems, and applies to driers for use in refrigeration systems using Refrigerant 12 (dichlorodifluoromethane-CCl₂F₂) or Refrigerant 22 (monochlorodifluoro-

methane-CHClF₂) as the refrigerant.

NO FILTERING MEDIA

It does not consider filtering media in various systems, since "the subject of filtration is separate and distinct from the standard's considerations."

At the same time, while recognizing the fact that acid in a refrigeration system causes harmful corrosion, and that many driers will remove acids, the standard does not deal with acid removal since "there is no positive knowledge at the present time as to what concentration of various acids is allowable, nor how to test a drier's ability to remove these acids."

Air Conditioning Noise Problems

Treatment Needed Near Fan, In Duct Branches, Expert Explains

LOS ANGELES—Noisy air conditioning equipment came in for discussion at the third west coast Noise Symposium here, preceding the 52nd meeting of the Acoustical Society of America.

Package air conditioning manufacturers should eliminate noise impedance by actual tests in all types of construction, Dr. R. O. Fehr, manager of General Electric's Mechanical Engineering Laboratory at Schenectady, N. Y., told the symposium.

Donald Loye of Los Angeles discussed sound deadening treatment of air conditioning systems for hotels and hospitals.

Leo L. Beranek of Bolt,

Beranek & Newman, Inc., acoustical engineer with offices in Los Angeles and Cambridge, Mass., said contractors should use new information on grille noise, fan noise, and noise design requirements.

To really cope with the noise problem, Beranek said sound treatment is necessary near the fan and in the duct branches.

Room one may be getting fan noise through the duct, it was noted. Sound deadening should be applied where the duct enters the room. Also sound deadening should be applied on the duct which branches off to serve an adjoining room.

Beranek pointed to two methods of dealing with noise in air

conditioning duct systems.

First and best known is to line ducts with material 1/2, 1, or 2 in. thick. This method requires upward of 15 ft. of duct to be treated. Duct branches should also be treated.

Second and new method uses package sound deadening units. These can be placed near the fan, and on branch ducts where they leave a main duct.

Advantages of package sound deadening units were listed by Beranek as follows:

A known attenuation of sound is accomplished; duct inspection is eliminated; units will not blow out as sound deadening material sometimes does; easy to specify in specifications; smaller ducts can be used.

To Condition Bldg.

ST. LOUIS—The Life Insurance Co. of Missouri, operating in a number of states, has begun construction on its new air conditioned home office building.

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BIG BONUS FOR AIR CONDITIONING DEALERS!

Luxurious, all-expenses-paid vacation in one of the world's natural paradises! Yours... along with Bigger Profits and Better Business when you sell General Electric Commercial & Industrial Air Conditioners

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First—call your General Electric Distributor—or mail coupon at right. Do it today! Then—get set for the time of your life. More profits, business and prestige—plus a free vacation you'll never forget. How can you miss? You'll be handling the finest products of their kind—and getting the strongest sales and advertising backup in the industry! You'll soon roll up the sales volume needed to send you to Mexico City. Don't delay—act now!

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In Canada, Canadian General Electric Co., Ltd., Montreal

Conditioning, Refrigeration Courses Offered In New Bldg.

BIRMINGHAM, Ala. — Commercial Trades Institute recently moved into a new building at 5601 First Ave. N. here.

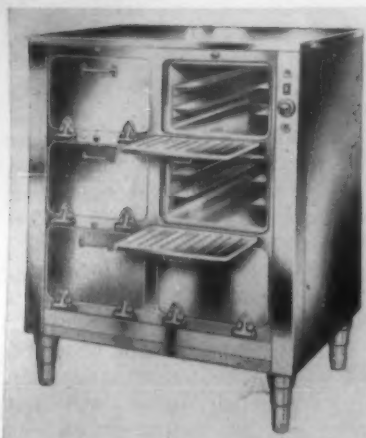
This technical training center offers day and night classes in air conditioning and refrigeration, electricity covering major appliance units, and electronics in television.

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MOTORS
NEVER BURN OUT**
when protected with



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223 ASH STREET • AKRON, OHIO

Franklin Redesigns Electric Food Warmer Line



KEY NO. G-130

CHICAGO—A complete new line of "Thermotainer" electric food warmers was recently announced here by Franklin Products Corp.

Redesigned, all units in the line have new features, the firm pointed out. New unitized, die-stamped construction used in all units is said to make them stronger yet

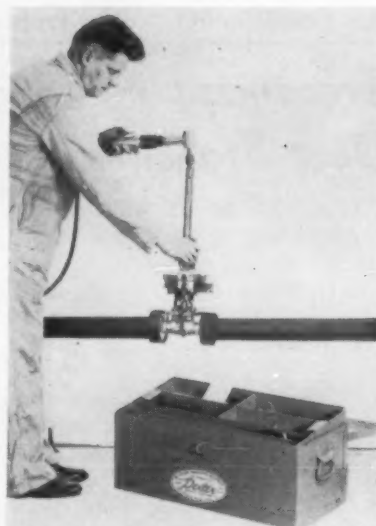
lighter. Flush type doors recess into the cabinet. Interior surfaces of doors are ribbed for extra strength and to reduce marring.

A new stainless steel stop hinge was devised also, the company said. Tension of the concealed spring within the hinge may easily be adjusted from the outside without any special tools.

Other features included are new electrical inspection access panels, slideaway dampers, removable compartments, glass fiber insulation, and streamlined interiors and exteriors, the firm noted.

Thermotainers now feature a stainless steel adjustable leg designed for easy cleaning.

Pictures of "What Was New at the Chicago Marts" may be found on pages 12 and 13 of this issue. Use Key Numbers and "Information Center" blank on this page for more information concerning these pictures.



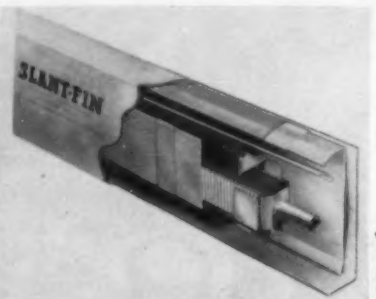
Leavitt Offers Valve Reseating Grinder

KEY NO. G-131

ORANGE, Mass.—Leavitt Machine Co. here recently developed a new motor-driven "Dexter Valve Reseating Grinder." It is claimed to regrind any globe or gate valve from 1/4 to 12 in. without removing the valve from the line.

Together with abrasive cloth grind elements, the new unit can grind the seat of any valve regardless of material hardness, the firm said. Grinding elements, made in the form of cones and segments, are mounted on various size rubber coated grinding heads. By changing these, the same machine can be used on various size valves, it was added.

Refacing irregular valve seats from the same "reference point" used in machining the original seat can be accomplished, the company stated. The new unit is available in kit form in three basic models for either globe or gate valves.



Baseboard Radiator Package Introduced

KEY NO. G-132

RICHMOND HILL, N. Y.—A new 3/4-in. baseboard radiator package designed for easier installation and high B.T.U. output was recently announced by Slant-Fin Radiator Corp. here.

Available as a complete package, the new unit includes heating element, snap-on cover assembly, support brackets, adjustable vane dampers, track expansion "clip" hangers, and splice plate. Packages contain units in 4, 5, 6, and 8-ft. sizes.

The one-piece back and top panel is designed for flush or recessed installation, the company explained. Track expansion clip hangers permit free, noiseless thermal expansion. Adjustable vane dampers use a new pivot-action principle for finger-tip control which eliminates knobs or chains, the manufacturer declared.

Heating element's copper tubing is 3/4 in. in diameter, one end flared. It has a specially shaped aluminum fin which measures 2 1/2 by 2 1/2 in. bent to 2 1/2 by 2 1/2 in. which utilizes the slant-fin principle for more heating surface per linear foot, the firm noted. Fin edges have an extra angle creating a stack effect for increased efficiency and strength, it was explained.

Self-Powered Truck Cab Conditioner Produced



KEY NO. G-133

MINNEAPOLIS — Designed "specifically" for comfort cooling, dehumidifying, and circulating air in the driver's compartment of a truck chassis, a self-contained, self-powered mechanical cab air conditioner has been developed by D. W. Onan & Sons, Inc. here.

Dubbed "Kab Kooler," the unit can also be used by operators of cranes, power shovels, earth movers, and other equipment where the operator's compartment is closed, explained the firm.

The air conditioner can be installed in display vans, bookmobiles, mobile showrooms, and commercial panel truck bodies for transporting flowers, candy, and baby chicks, it was added. In addition, it can be used aboard marine equipment.

Weighing 225 lbs., the Kab Kooler mounts directly on and to the roof of a truck cab. It is gasoline or propane engine driven, completely self-contained except for fuel pump, fuel supply, and starting batteries. It has a rated capacity of 1 1/2 tons at 110° F., 40% relative humidity.

Heart of this newly-developed air conditioning unit is the direct-mounted engine-compressor. The Onan model AJ engine is a four-cycle, single-cylinder, air-cooled unit rated at 4.25 hp. at 2,600 r.p.m. Fuel supply either comes from truck gasoline or alternate propane fuel tank. The engine-compressor is shock-mounted on a rigid welded frame, said to eliminate excessive vibration.

Compressor is directly mounted to the engine crankcase for permanent alignment, eliminating drive belts, pulleys, and other parts, the firm explained. It is electrically

started by either 6 or 12 v. d.c. Approximate dimensions of the Kab Kooler are 29 in. long, 29 in. wide, and 19 in. high.

An air housing projects through the roof of the truck cab and provides two cold-air inlets with directional deflectors and a return air duct. Controls are set inside the cab on this housing. Engine ignition switch, electric start button, engine speed control with locking device, and a vent control for the fresh air inlet are also located on this housing.

Shipped to the user complete, ready-to-use, fully charged with refrigerant, the Kab Kooler is factory tested and can be installed by "any" body man or mechanic, the company declared.

Hand Fastener Used For Concrete, Steel

KEY NO. G-134

PORTLAND, Ore.—Omark Industries here recently offered a "Hammer Drive" hand fastening tool for use on concrete or steel.

Requiring no power source such as cartridges, electricity, or air, the tool concentrates the force of a hammer blow to the head of a special hardened steel drivepin, according to the company.

A drivepin is inserted into the barrel of the tool from the bottom. A plastic washer holds the pin steady while it is being driven. The driving ram is pushed into the barrel from the top of the tool which is then held securely against the receiving material while two or three hammer blows are struck on the driving ram head forcing the pin into concrete or steel, it was stated. The plastic washer disintegrates at the last hammer blow.

Four types of drivepins in over 30 sizes are available. Tools are sold complete with metal carrying case.



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(list name, page, and issue date)

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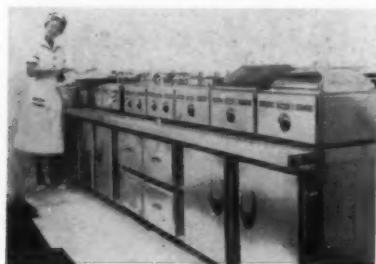
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Foster Offers New Counter Refrigerators

KEY NO. G-135
HUDSON, N. Y.—Foster Refrigerator Corp. announces a new improved 1957 line of welded all-aluminum counter refrigerators. With the addition of modern electric cooking units, these refrigerators are said to become "self-contained kitchens."

These self-contained kitchens are designed to meet the basic needs of modern food service operations, for refrigeration and heating facilities, according to Foster.

The superstructure is completely wired and fused, and contains outlets for electric cooking equipment—models available to house 3, 5, or 7 cooking units.

The work tops are finished in consoweld with an oak cutting board. Also available are such features as adjustable legs, glass doors, and sliding refrigerator drawers.

The model illustrated is #UC-5-W-U. It is completely wired to house five cooking units and ready for immediate plug-in operation. Foster offers 20 other models of counter refrigerators—self-contained or remote.

Wagner Reduces Weight On Some Small Motors

KEY NO. G-136
ST. LOUIS—Wagner Electric Corp. recently made capacitor-start and split-phase motors in rigid and resilient base models available in NEMA 48 frame size, it was announced.

Weights of $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{1}{2}$ hp. ratings have been reduced from 3 to 8 lbs., the firm noted. A new lubrication system is said to permit mounting sleeve bearing motors at any angle with positive lubrication in every position. Bearings have anti-seizure and non-scoring characteristics, corrosion resistance, and provide smooth work with low temperature rise.

"Mylar" paper laminated slot insulation gives high dielectric strength, moisture resistance, and thermal stability, it was added.



- ◆ Extra-large storage
- ◆ Safety from freeze-up
- ◆ Fast hourly recovery
- ◆ 20-year life construction

Capacities: 5 to 500 g.p.h.
Storage: 2 to 240 gals.

Water coolers for all uses factory-packaged with your condensing unit. Write for literature.

FILTRINE MFG. COMPANY

216 W. PROSPECT ST. • WALDWICK, N. J.

New Series of 'Center Lock' Wheels Offered

KEY NO. G-137
TORRINGTON, Conn.—A new series of "Center Lock" blower wheels is currently being produced by Torrington Mfg. Co. here for use with residential and commercial air conditioning and heating equipment.

Type CL medium-diameter impellers are de-

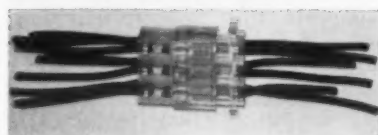
signed to replace double-width, double-inlet wheels in the same sizes in under-the-window air conditioning and heating units and room air conditioners with no change in housing or motor, the manufacturer said.

Center-disc of the design is dovetailed under pressure into the encircling blades, forming a compression fit which tightens during rotation.

AMP Introduces Multiple Receptacle Block

KEY NO. G-138
HARRISBURG, Pa.—A versatile multiple receptacle block claimed to enable simultaneous engagement of 6 to 9 "AMP Faston" terminal tabs to "AMP Faston" receptacles was announced here by Amp, Inc.

It simplifies multiple-circuit engagement of remotely mounted switches to countertop ranges, of top and bottom circuits in automatic clothes washers, and other similar applications, according to the company.



There is a possible range of from six separately insulated circuits to 15 common leads, the firm said. Any combination of circuits may be made common through use of bridging contacts located within the insulated housing.

Gas Valve Designed To Cut Explosion Hazards

KEY NO. G-139
MUNCIE, Ind.—New automatic gas valve designed especially to reduce explosion hazards in boiler firing was recently developed here by Maxon-Premix Burner Co.

Series 4600 valves incorporate a dual release mechanism as a double safeguard against mechanical failure, each operating simultaneously and allowing the valve to close whenever there is any interruption in electric safety circuit, the company noted.

The superduty drive unit has extra-heavy transmission and bearings, oil immersed. All metal internal parts include disc and seat that are heat treated to a high degree of hardness and "ultra-lapped" to mirror finish, it was added. A tight closure results which is said to withstand hardest service.

Third feature is a "Shearing-Action" body design. This "positive" closing and sealing feature results from the self-cleaning action of the valve disc which shears



off small quantities of pipe scale, welding bends, or other foreign matter found in operating conditions, the company said.

Units from 1 to 6 in. standard pipe sizes are available.

RUBATEX OVERCOMES MOISTURE PROBLEMS

ALLOWS SIMPLE DESIGN—CUTS PRODUCTION COSTS

Reasons why Gibson Refrigerator Company switched exclusively to Rubatex on 19 separate parts for their room and commercial air conditioning units.

"Gibson window units dehumidify and remove up to 12 gallons of moisture from the air daily. With Rubatex at sealing points—there's no danger of water leaking into room or dripping on side of building. If we used anything else in place of Rubatex, we would need a more elaborate design to handle the problem of moisture control."

James M. Sweedyk
Chief Air Conditioning Engineer
Gibson Refrigerator Company
Greenville, Michigan



Gibson was faced with a problem of finding a product that would provide an air seal which would prevent sweating and accumulation of moisture, plus a material to act as a sound deadener as well.

After exhaustive laboratory tests, rubber and other materials, which soaked up water and started dripping when the saturation point was reached, were ruled out. Rubatex Closed Cellular Rubber met test operations on every count and was specified for 19 Gibson air conditioning unit parts.

Five years of exclusive use of Rubatex still convinces Gibson engineers that Rubatex offers them the most effective sealing material they can buy—efficient moisture control, excellent sound deadening qualities, plus considerable savings in simple design and quick, easy production methods.

If you have a moisture control problem, it will pay you to check the advantages of Rubatex first.

Earl Palmer, Manager of Gibson's Heating and Central Air Conditioning, points to the Rubatex strips used to seal door on their commercial central air conditioning unit. He says, "Rubatex with its closed cellular structure repels water indefinitely. Water cannot penetrate even at cut edges. And that's important toward long lasting efficiency of our air conditioning units."



Rubatex G-200-C and G-208-C stocks are easily installed by assembly-line worker. An adhesive is applied to the metal, atop which approximately $\frac{1}{2}$ " wide strips of Rubatex are easily put into place.

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For full details and sample of the new Rubatex Closed Cellular Rubber Sealing Strip—print your name in space below, attach to your company letterhead and mail to us.

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Heat Pump Solves Cost, Water Access Cooling Problem In Office

The Heat Pump—Its Present Status and Future Prospects

What's the present status and future prospects of the heat pump system of air conditioning?

The editors of the News are often asked this question, and so in the following pages are presented a number of stories and articles which will give some picture of current progress and future prospects for heat pump air conditioning as of the start of the year 1957. Of particular interest to those interested in the over-all market picture for this form of air conditioning, the discussion by H. M. Brundage should be of particular interest.

Heat Pump Conditions All-Electric N. C. Home

SANFORD, N. C.—More than 4,500 persons in this area visited a home heated and cooled by a heat pump in Sanford's first all-electric home opened to the public.

King Roofing & Mfg. Co., General Electric Co. Weathertron heat pump dealer installed the wiring, plumbing, insulation, roofing, and kitchen center.

Representatives of the dealer, the distributor, and the manufacturer took turns explaining features of the Weathertron.

CINCINNATI — To cool a large general office and an interior executive office on the 38th floor of a downtown Cincinnati office building at minimum expense and with no permanent alterations to the building, a packaged heat pump unit was installed by the tenant occupying the offices.

The tenant's problem was not only to avoid high installation costs through disrupting alterations to the building but also that the offices had no ready access to water or drain pipes. The executive office further had no provision for outside ventilation.

The heat pump solved the problem without the use of any plumbing. A 3-hp. Westinghouse heat pump was installed in a corner of the general office. The unit is flanged to an adjacent window opening, the window



COOL AIR is supplied to this 38th floor Cincinnati office and an interior office by means of a supply duct mounted against the ceiling running from the 3-hp. Westinghouse heat pump at left.

glass being replaced with a louver.

Cool air is supplied to the interior office and large outside office by means of a supply duct mounted against the ceiling.

Since the heat pump has an air-cooled condenser, no water is required. However, during summer cooling, moisture condenses on the cooling coils. This moisture is merely collected and sprayed in a fine mist over the outside air-cooled condenser. What moisture doesn't evaporate is blown into outside air.

The engineering for the installation was done by the Kuempel Co., the Westinghouse air conditioning distributor.

Heat Pumps Cool Dress Shop Year-Round

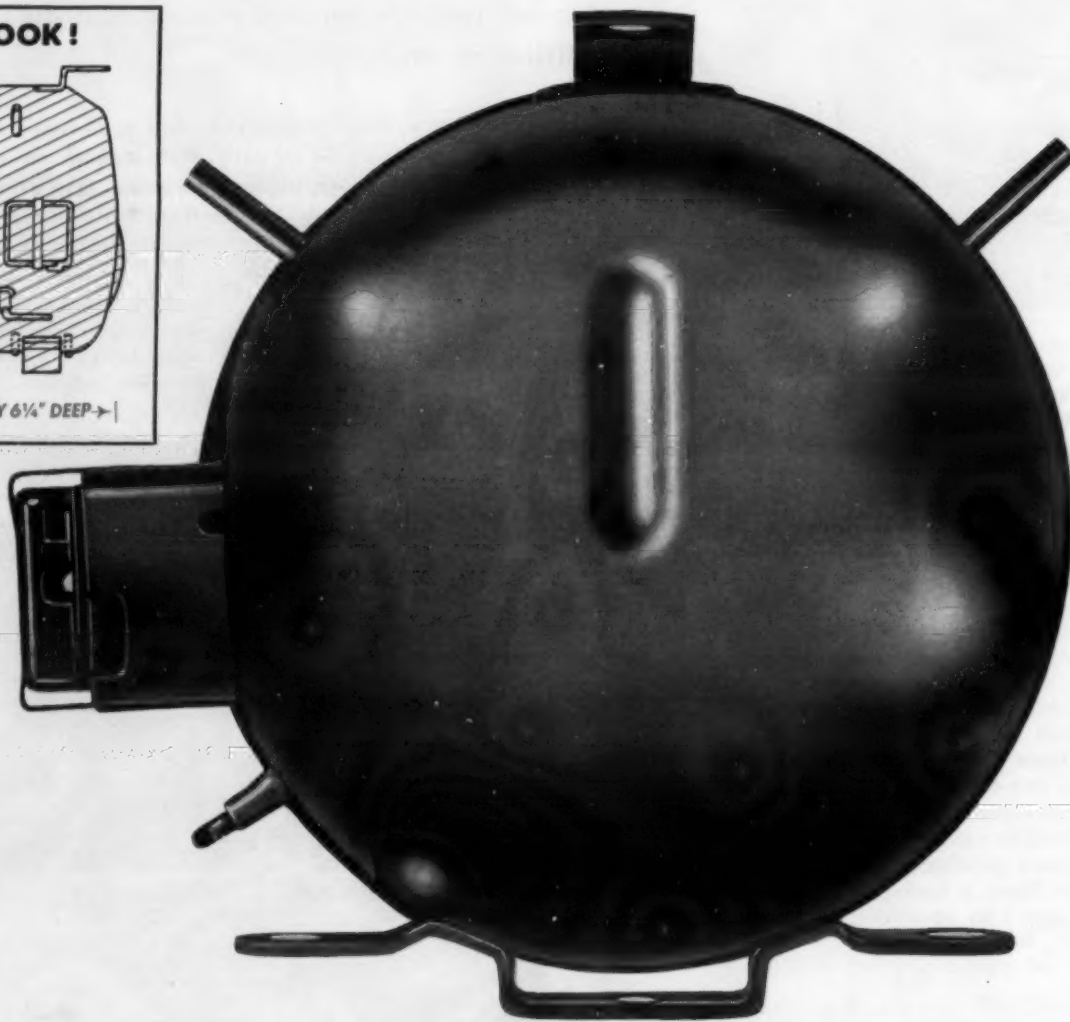
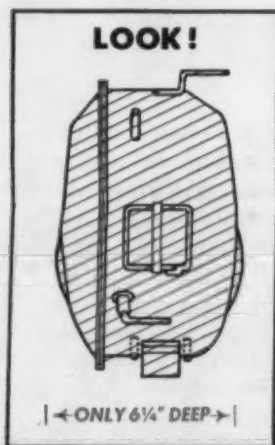
ST. LOUIS—A new commercial building at 4971 Maryland Ave. will soon be completed for its new tenant, Josephine Scullin, Inc., dress shop currently located at 387-9 N. Euclid Ave.

Heat and air conditioning for the entire two-story building will be provided by General Electric Co.'s "Weathertron" heat pumps.

Jamaica Lures Capital

NEW YORK CITY — The Government of Jamaica, B.W.I., has eliminated or substantially liberalized its industrial income tax laws and import duties in a move to stimulate capital investment on the Island by members of the American refrigeration and air conditioning industry.

NOW AVAILABLE... NEW "SPACE-SAVER" HERMETICS DEVELOPED BY KELVINATOR



LOOK! ONLY 11 3/8" WIDE
COMPACT, LIGHT WEIGHT, HIGH CAPACITY, TOP QUALITY
... ONLY 10 11/32" HIGH x 11 3/8" WIDE x 6 1/4" DEEP!

Kelvinator now is in production on a series of new, truly compact sealed compressors. These advanced-design "Space-Saver" units have been thoroughly proved in volume testing of production runs. Available in models for natural or forced convection applications,

they are ideally suited for household refrigerators, freezers, water coolers, dehumidifiers, beverage coolers and many other refrigerated products. Write now for complete information to Contract Department, Kelvinator Div., 14250 Plymouth Road, Detroit 32, Mich.

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Makes Heat Pump Demonstrator

Rigs Standard Room Unit with Reverse Transfer Valve, 2 Pressure Gauges, Supplementary Heat, Adds Air Ducts, 4 Dial Thermometers

GREENSBURG, Pa. — To demonstrate to consumer groups how a heat pump works, J. H. W. Cleland, a specialist in the electric home and farm service of the West Penn Power Co., has rigged up a standard room air conditioner with some special gadgets.

Actually only one feature has been added to the basic unit. That is a transfer valve to reverse the refrigeration cycle and produce heat as well as cooling, Cleland noted.

COMPONENT PARTS SEEN THROUGH PLASTIC COVER

But the standard cover has been replaced with one of clear plastic so that component parts of the unit may be seen. Two pressure gauges have been added to indicate the suction and discharge pressures. Two stages of supplementary resistance heat have also been added below the "indoor" coil to add heat to the indoor circuit when the machine is on the heating cycle.

To make the demonstration more understandable, Cleland fastens short pieces of galvanized metal air ducts to the unit, labeling them "indoor air supply," "indoor air return," "outdoor air supply," and "outdoor air return."

On a backboard he also hooks up four dial thermometers to indicate temperature differences in each of the four air streams. To obtain more rapid temperature changes during the demonstration, he places the thermometer bulbs in the indoor air supply and outdoor air exhaust directly in contact with the refrigerant coils.

Other equipment used includes four cards and paper streamers to indicate the air flow circuits, casters and carrying handles on the unit to ease the job of moving it, a wooden frame for supporting the machine in transit and a wood platform for use in the demonstration.

Cleland suggests that the demonstrator make sure in advance that he can get a table at least 3 ft. square that will support at least 200 lbs. on which to set the unit. He should also locate a separate 115-volt circuit—or at least one not heavily loaded.

CHECK BY OPERATING ON HEATING, COOLING

Prior to the demonstration, he said, the machine should be turned on to determine whether the circuit will carry the full load. Then it should be operated on both heating and cooling cycles to ascertain that there is sufficient temperature difference between the indoor air supply and outdoor air exhaust.

Generally, he explained, the ambient room temperatures will be recorded on the meters on the indoor return and the outdoor intake.

The machine should first be operated in the cooling cycle. The reverse cycle control should not be operated any more frequently than necessary. The time required for the thermo-

stats to settle down between cooling and heating is about right for reversing intervals, he noted.

On the cooling cycle, the indoor supply air should drop about 15° F. below a normal room temperature of 70 to 75° F. Outdoor exhaust should drop about 10° F. On the heating cycle, the indoor supply air temperature should read about 100 to 110° F. and the outdoor exhaust should drop to about 60 to 65° F.

When demonstrating the heating cycle, Cleland said, the temperatures on the thermometers should be allowed to reach maximum differences before turning on the booster heat.

He suggested that the demon-

strator explain the purpose of the booster heat by turning on stage one, allowing the temperature to rise a few degrees. It is not necessary to wait too long before turning on stage two.

In any event, he noted, the booster heat should not remain on for more than 10 minutes, since it may affect the pressure within the refrigeration circuit.

For this reason, in standard heat pumps, the booster heat is always placed in the air stream coming off the supply side of the indoor coil, he said.

In his talk to the public, which explains how the heat pump provides heat through refrigeration, Cleland stresses the efficiency of the all electric unit. He emphasizes the air-to-air

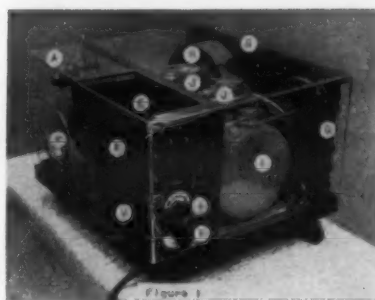


FIG. 1—Basic unit includes (a) control switch in rear, (b) reverse cycle valve, (c) booster heat switch, (d) booster heating elements, (e) indoor coil, (f) indoor fan, (g) outdoor coil, (h) outdoor fan, (i) compressor, and (j) pressure gauges.



FIG. 2—Assembling air ducts.



Fig. 3—Completed assembly.

or being installed. One home has a full year of satisfactory experience in back of it.

They're ALL in the *Gibson* line now!

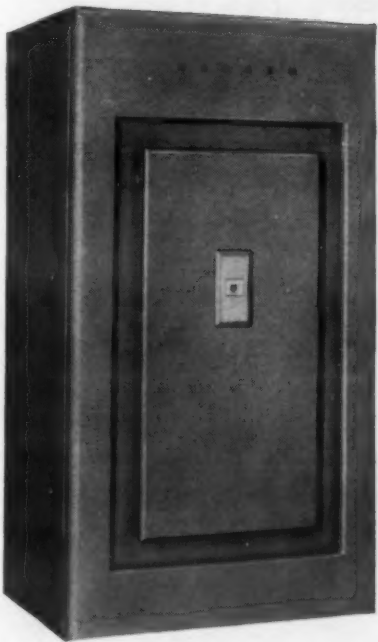
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5-Ton Self-Contained Commercial Air Conditioner. Installs quickly in 7.73 sq. ft. of floor space.

Gibson Refrigerator Company, Greenville, Michigan

Just what the dealer ordered—a complete heating and air conditioning "package" from the source that prices right and pays the profits! From Gibson you now get just what you need—and only what you need—for your customers. All Gibson units are engineered for easy installation and minimum service. Look over the list, then see your distributor about the promotional and other helps that Gibson gives you!

Residential Air Conditioning

2 - 3 - 5 ton units
Air-cooled and water-cooled
New attic units with prefabricated ductwork
Remote air-cooled units 2 through 10 tons
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Commercial Air Conditioning

Packaged units 2 to 40 tons
All factory-assembled and tested
Exclusive Gibson STRAT-O-VENT air circulation

Domestic Heating

Gas and oil-fired heating units
Exclusive EVEN-FLO Vari-flame
Complete line—Hi-Boys and Lo-Boys
Year round air conditioning

Industrial Air Conditioning

Packaged direct expansion systems up to 40 tons
Packaged chillers
Water-to-air and air-to-air heat pumps

Gibson®

DIVISION OF
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CORPORATION

Temperature Experts for 80 Years

Heat Pumps Automatically Handle Varying Load In Tennessee Bldg.

Engineer Cites Space, Labor, Operating Savings

By George M. Hanning

BRISTOL, Tenn.—Eight General Electric "Weathertron" heat pumps automatically handle a wide variety of heating and cooling requirements in the headquarters building of the Bristol Tennessee Electric System here.

With a total capacity of 40 tons of cooling, they maintain comfortable temperatures in such diverse areas as an occasionally used "Hospitality Hall" for cooking schools to a well-patronized locker room and shower for servicemen.

The units were installed early this year as part of the construction of the System's new



MAZE OF INSULATED ductwork in machinery room at Bristol Tennessee Electric System gives appearance of impenetrable forest. Note how plenum of unit at right is arc-ed into horizontal supply duct. Vertical ducts serve outdoor circuits taking fresh air from roof immediately above.



HIGH SIDE WALL outlets supply Hospitality Hall with 6,000 c.f.m. of air at all times. Thermostats on wall, each controlling a separate heat pump, are set 3° apart so only units needed to meet cooling requirements are used. Note common return grille at right of double door.



SHOWER ROOM is cooled and heated through ceiling diffusers. Power exhaust fans dissipate moist air to the outdoors.

building. The installation was engineered and installed by the Farnsworth Heating and Supply Co., local Weathertron dealer.

John L. Gray, general man-

ager of the System, noted that the heat pumps were selected because they were part of the contractor's low bid. But the members of the Power Board

voted in the heat pumps over a conventional heating and air conditioning system by precisely \$10,000 less in cost.

Robert Ferrell, registered engineer, pointed out that the heat pump offered the utility a num-

ber of economies. These included space saving, operating efficiency, and labor.

Space was saved as a single 18 by 18-ft. room in the center of the second floor was the only area "lost" to equipment. Operating efficiency was attained through individual control of units so that only those units needed would operate at any particular time.

Low electric cost figures indicate that much of the heating has been done by the heat pump itself without resort to the 13 kw. resistance heaters built into each unit, Ferrell said.

Labor was saved because no operating engineer is needed to look after the equipment, as operation is completely automatic.

The utility building is a two-story brick structure in downtown Bristol with large plate glass windows facing west. It is 105 ft. deep and 87 ft. wide.

Ground Floor Split

By Wall Down Center

The ground floor is split lengthwise down the middle by a solid wall. The wall is broken only by two entrances, one at the front and the other about midway back.

To the left of the wall in the front is a 30-ft. deep customer area for paying bills and other public business. Behind the solid front of cashier's cages facing this area is an open bookkeeping area. At the rear are a number of small offices and restrooms.

To the right of the wall, at the front of the building, are the entrance lobby, the accounting department, and the general manager's office. Behind these, and separated from them by a short corridor, are the engineering and printing rooms.

Immediately to their rear a second corridor cuts completely across this side of the building, opening into the bookkeeping department on one side and to the parking lot on the other. Behind this corridor are a row of small offices for service officials, a locker and shower room, and a meter room.

5 Heat Pumps Serve Ground Floor Areas

Five of the eight 5-ton, 7½-hp. heat pumps serve these ground floor areas. Two are assigned to the customer and bookkeeping areas, one to the rear offices and restrooms, one to the area in front of the cross corridor and one to the areas behind that corridor.

Two heat pumps were used for the customer and bookkeeping areas, Ferrell explained, be-

(Concluded on next page)

WAGNER ELECTRIC MOTORS... THE CHOICE OF LEADERS IN INDUSTRY

smaller, lighter
fractional
horsepower
motor
solves
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Type RK, Capacitor-start, 1/8, or 1/4 hp.

the WAGNER "48"

Here's the 48 frame motor you've been looking for! The Wagner "48" capacitor-start motor with either resilient or welded rigid base. You get the standard 48 frame size, with from three to eight pounds less weight per motor than previous models of the same hp ratings!

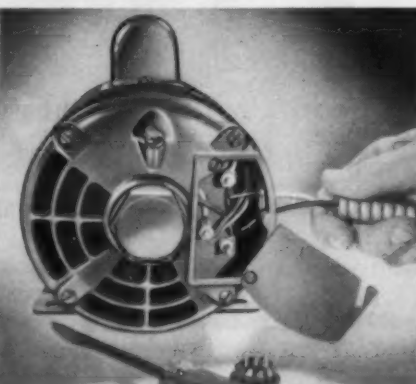
The Wagner "48" is rugged enough to permit direct mounting, compact enough to fit in tight spots, will

operate efficiently when mounted at any angle. Through ventilation assures cool operation that adds to motor life.

If you would like to test the Wagner "48", one of our field engineers will be glad to furnish a sample motor. Contact the Wagner Branch near you or write to the factory.



ALL ANGLE OPERATION. You can mount the Wagner "48" at any angle. A new lubrication system assures positive protective lubrication in any position.



EASY TO CONNECT. Just loosen one screw for access to terminal board. EASY TO SERVICE... no need to disconnect leads when removing endplates.



ALSO AVAILABLE IN SPLIT-PHASE TYPE. The Wagner "48" is also furnished in split-phase type, with resilient or rigid base in ratings of 1/8, 1/4 and 1/2 hp.



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ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES • AUTOMOTIVE BRAKE SYSTEMS—AIR AND HYDRAULIC

For more information about products advertised on this page use Information Center, page 18.

Heat Pumps Offer Flexibility --

(Concluded from preceding page) cause of the anticipated load fluctuations. At some hours, the area may be jammed with customers amid a flurry of activity. At others there may be only a few clerks and cashiers.

Another factor is the large expanse of plate glass windows facing the west. The windows are covered by white venetian blinds.

These two units connect to a common furred in supply duct that runs along the inside wall at ceiling level. Two high wall registers throw air into the public space, one register cools the entry lobby, and two large ceiling diffusers dump air over part of the bookkeeping section.

The thermostat for one unit is located in the public space, that for the other in the bookkeeping area. A single central return is used to recirculate air.

Rear Half Has No Exposed Surfaces

The rear half of this side of the building can easily be handled by a single unit, Ferrell notes, because there are no exposed surfaces. The outside wall abuts the building next door, the rear wall adjoins the service garage, and there is a second floor above the ceiling.

Each office and rest room is supplied through a ceiling diffuser. A single high wall outlet handles the rear portion of the bookkeeping area.

Non-vision grilles in the doors to each office allow for a central return. Rest rooms, however, are equipped with power exhaust fans.

Due to space limitations, the two heat pumps serving the right hand side of the building share ceiling space in the second corridor for their main ducts.

The one covering the front of the building distributes air to the printing and engineering rooms through high wall registers. A branch duct runs forward to cool the manager's office through a ceiling diffuser and the accounting office through high wall registers.

Return is through a low wall grille in the short corridor connecting these rooms with the entry lobby. A solid door closes off these areas from the lobby.

Sun Load from Window on West

While the human load in this area is small and fairly constant, the unit has to contend with the sun load from the large glass exposure in the west wall. These windows too are covered by white venetian blinds, drawn in the afternoon.

The unit serving the rear areas on this side of the building, has no sun load problem but must overcome widely fluctuating human loads and high humidity loads from the shower.

Supply duct from this unit runs along the cross corridor to a hallway leading to the rear of the building. The duct, hidden above the ceiling of this hallway, runs to the rear wall.

High wall registers on either side cool the locker room, service offices, and meter room. Branch ducts to ceiling diffusers take care of the showers and toilets. An outlet at the end of the main duct cools a small stockroom in the garage immediately behind the building.

Locker and showers are supplied with power exhaust fans. The other areas return air to the cross corridor where a return duct takes it upstairs to the machinery room.

In the machinery room, the remaining three heat pumps are connected together in tandem to serve the Hospitality Hall, which extends across the entire front of the second floor.

These three units are lined up in a row, with the supply and return ducts running directly overhead, the length of the row.

The supply air plenum of each unit is arc-ed into a common supply duct at a 45° angle. This is done, according to Ferrell, so that the cold air from the upstream unit is not siphoned back over the coils of the succeeding units.

The supply duct advances from the machinery room to the rear side of the inside wall of

the Hospitality Hall and then both ways along the wall. Air is thrown through five high wall registers across the ceiling toward the windows on the outside wall. Like the windows on the ground floor, these are protected by white venetian blinds to reduce heat load.

Other outlets serve rest rooms off the auditorium and a small kitchen off the stage. Power exhaust fans carry off the air from the kitchen and rest rooms. A 48 by 48-in. common return grille near the rear draws air from the hall itself.

Ferrell noted that for ventilation purposes, a constant 6,000 c.f.m. of air is supplied to the auditorium at all times. Cooling and heating requirements are met by cutting in one or more of the units as needed. Each of the three thermostats is set 3° apart. If one fails to carry the load then the second comes on, etc.

The Hospitality Hall is out-

fitted with three thermostats, one for each unit. These thermostats are mounted on the inside wall, and spaced along its length. Thus, no matter which section of the hall gets the heavy load, the cooling system will be able to respond.

Part of Second Floor Will Become Office Space

The remainder of the second floor is not currently being used. It is earmarked for future expansion of office space. Ferrell believes that there is sufficient capacity in the present units to handle the additional load new offices would present. However, the units were designed only to take care of presently used spaces.

Ferrell pointed out that the cooling system is designed to provide 80° F. d.b. and 67° F. w.b. inside when outside temperatures are 95° F. d.b. and 78° F. w.b. and the heating circuit to provide 75° F. inside

when the temperature hits 0° F. outside and wind velocity is 15 m.p.h.

The vacant spaces on the second floor are heated in the winter by four 5 kw. electric unit heaters to help ease the load on the heat pumps. The storage and vehicle areas behind the conditioned spaces are heated with four 7½ kw. heaters.

Ferrell explained that all ducts on inside circuits are insulated with 1 in. of Ultralite and those on outside circuits are insulated with 2 in.

Condenser supply and return ducts go straight up from the units through the roof. Supply ducts drawing in outside air had to be goosenecked 135° with the opening facing downward, he said, to avoid drawing in rain during wet spells. The outside opening is also fitted with 45° extension binders to prevent short circuiting exhaust air from some units into the suction ducts of other units.



Uniquely flexible, Armaflex is neat and easy to apply. Its closed cell structure and high insulation efficiency prevent damaging condensation. No separate vapor barrier need be applied. Armstrong Armaflex has a conductivity of 0.28 Btu-in./sq.ft.-hr.-°F. temp. difference at 75° mean temperature.

New insulation stops condensation on liquid cooling-heating lines

Now you can stop dangerous condensation on liquid cooling-heating, chilled water, and other cold lines with this new, flexible insulation, Armstrong Armaflex®. Made of foamed plastic, Armaflex has a closed cellular structure that completely seals out moisture and air. No separate vapor barrier is needed.

Armaflex has a remarkably low K-factor of 0.28 at 75° F. In a ½" wall thickness, Armaflex prevents condensation under normal design conditions on indoor lines operating as low as 32° F. On heating cycles, it will withstand temperatures to 200° F.

You'll find Armaflex is easy to install, too. Highly flexible, it slips right

over pipes and copper tubing, follows contours without any special cutting or fitting. If lines are already in operation, just slit Armaflex lengthwise, snap in place, and seal with Armstrong 520 Adhesive.

Fitting covers are no problem. You can fabricate them quickly from miter-cut pieces of Armaflex and cement them together. Armaflex is clean to work with, too. It will not chip, crumble, or rub off; waste is negligible. Armaflex comes in 6' lengths, for pipes and tubing up to 3½" o.d.

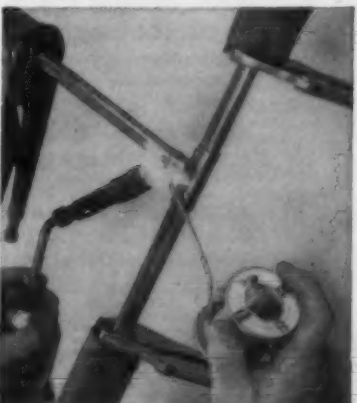
Get free booklet giving full facts on this remarkable new insulation. Write Armstrong Cork Company, 2001 Parsons Street, Lancaster, Pennsylvania.



Easy to apply, Armaflex can be slipped over piping as it's being installed. A talc coating inside the pipe covering speeds slip-on application.



Fitting covers are quickly fabricated by miter-cutting Armaflex. They then are snapped in place and cemented with Armstrong 520 Adhesive.



Self-extinguishing, Armaflex can be applied in advance to copper tubing and clamped back while fittings are sweated.

Armstrong

INDUSTRIAL INSULATIONS

Utility Executive Sees Bright Heat Pump Future—Has 'Economy, Flexibility'

NEW YORK CITY—With the use of the heat pump, with a coefficient of performance between three and five, the energy used by the 34 million residential heating systems in the United States could be supplied by about 200 billion kwh. of electrical generating capacity, estimates Thomas R. Kroeschell, an executive of the Common-

wealth Edison Co. in Chicago. "Of course, no one could expect full development of the heat pump along these lines," he added quickly, "but even a fraction of this market seems big when compared with the total residential electrical consumption in 1953 of 97 billion kwh. for all electric appliances. "The future of the heat pump

seems bright," he declared. "Both industry and the residential user should derive great benefits from the development of this device."

Speaking before a convention of the American Society of Mechanical Engineers here, Kroeschell outlined the advantages of the heat pump and some factors governing its application in the Chicago area.

FIG. 1—COMPARATIVE COST OF HEATING METHODS

Method of Heating	Cost Per Unit	Cost Per Million B.t.u.
Electrical resistance	2.45¢ per Kwh.	\$7.20
Heat pump COP=2	2.45¢ per Kwh.	3.60
Heat pump COP=3	2.45¢ per Kwh.	2.40
Coal, 12,000 B.t.u./lb.	\$20/ton	1.39
Oil, 140,000 B.t.u./lb.	15.1¢ per gal.	2.45
Natural gas, 1,000 B.t.u./cf	84¢ per 1,000 cf	1.40

Note:

Fuel burning efficiencies assumed to be 60%. Experience shows that coefficients of performance of 2 or 3 are obtainable in the Chicago area.

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Cites Advantages

"The heat pump has four advantages over any other form of heating and air conditioning," he asserted.

"First, it has an economy of installation. The heat pump combines heating and cooling into one system. By this combination, duplication of ductwork, piping, and motors is eliminated.

"Second, the heat pump can

be compactly installed. By combining the heating and cooling systems into one unit, much space can be saved.

"Third, this system lends itself to flexibility of layout. The equipment can be located in any part of the home. It can be placed on the roof, in the utility room on the first floor, or in the basement.

"Fourth, the home can oper-

ate with a single utility service. By the addition of electric heating and with an electric range and refrigerator, no other utility will be needed.

"The heat pump, if installed correctly, should be as dependable as the ordinary home refrigerator."

Kroeschell said that in the Chicago area, "where a wide variety of air temperatures are experienced, air may not be as acceptable a heat source as soil or water.

Water Seen 'Best'

"Water, with a stable year-round temperature of approximately 50° F. would provide the best heat source except for the difficulty of obtaining and disposing of the water.

"Lake water is not acceptable since it will drop to 32° F. in the winter. The earth, although not as stable in temperature as water, provides a good heat source for the Chicago area.

"The heat pump can be used with two types of buried pipe. One system incorporates the indirect method, the other the direct method.

"Heat pumps in the Chicago area will usually consist of a closed, or indirect, system of buried pipe through which an anti-freeze solution is circulated and an inside loop through which the refrigerant is circulated.

"The advantage of this system is in the method of installation. It is possible to fabricate the refrigerant loop at the factory. This makes possible an exact control over the quality of the refrigerant. It also provides facilities to properly check the system for leaks.

"The system itself will not be as efficient as the direct method due to the double heat exchanger. A greater over-all temperature difference is required and additional power is needed to operate the pump.

Direct Method 'Simpler'

"The direct method is simpler, has a greater efficiency, but will require assembly in the field. The field assembly provides a possibility for inaccurate fabrication.

"The indirect method should (Concluded on next page)

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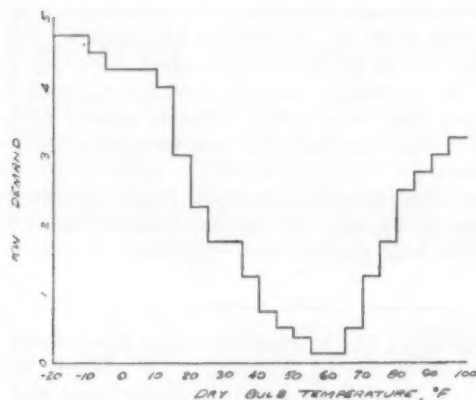


FIG. 2—Heat pump kw. demand as a function of temperature graphed.

Sees 'Bright' Heat Pump Future--

(Concluded from preceding page) provide the best method for collecting heat as its lower cost and ease of installation should out-weigh its lower efficiency.

"Using a single loop of about 700 ft. of 1/2-in. pipe buried about 4 ft. deep, enough heat should be extracted from the ground to meet the heating requirements of a six or seven-room house on an average city lot (50 by 135 ft.) for a Chicago winter.

In addition, the ground should recover over the summer months to properly resume the heating cycle the next winter. An increase in moisture content was noticed after the winter heating season but should have no effect on soil conditions.

"The unique feature of the heat pump is that while there may be a loss of energy delivered from the power system of about 10% in the motor which operates the compressor, only 33% as many kwhrs. are required to provide the same amount of heat radiated by an electric resistance heating system.

Coupling with Resistance Heating Foreseen

"The heat pump coupled with electric resistance heating for winter peaks is the place to which we can look for the development of electric heating in the home.

"Costs of heating by various methods can be compared by determining the cost for each method per B.t.u. The costs for this area for the various methods are shown in Fig. 1. According to the table, the heat pump is in a competitive cost range with the other heating methods.

"It is difficult to compare the equipment and installation cost of the heat pump system with other heating systems. Since the heat pump system combines both heating and air conditioning, it must be compared with the combined cost of other heating and air conditioning systems.

Installation Cost Should Compare 'Well'

"On this basis, also, the heat pump, due to lack of duplication, should compare favorably to any other system.

"The electric utilities have an important role in any development of the heat pump. With the addition of the heat pump, the residential load will be approximately doubled.

"Demand for electric energy will vary directly and indirectly with change in outdoor air temperature. Any great decline in

temperature will require heating to provide warmth. Any great increase in temperature will require cooling for comfort. In each case, the compressor and pump will be needed. A typical curve demonstrating this effect is shown in Fig. 2.

"In the Chicago area, the winter heating load will provide

the largest demand for electric energy. Due to our mild summers, a low cooling load will be experienced. In average years the ratio of winter heating to summer cooling is 4 to 1.

"The effect of the heat pump based on residential electric sales alone, in the Chicago area, should merely tend to amplify the winter peaks and raise somewhat the summer valleys that are prevalent today.

"An average 6-room home should require a heat pump with a 3-hp. motor in addition to some resistance heating.

Heat Pumps Will Be Topic at March 27 Power Conference

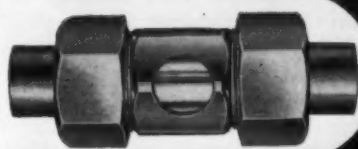
CHICAGO—Use of heat pumps and solar energy for home heating and home cooling with electricity will come up for discussion at the 19th annual American Power Conference to

be held in the Hotel Sherman here on March 27-29.

The conference, expected to attract 3,000 executives, scientists, engineers, educators, and government officials, is sponsored by the Illinois Institute

of Technology in cooperation with 14 universities and nine national and regional technical societies. Among the latter is the American Society of Heating and Air Conditioning Engineers.

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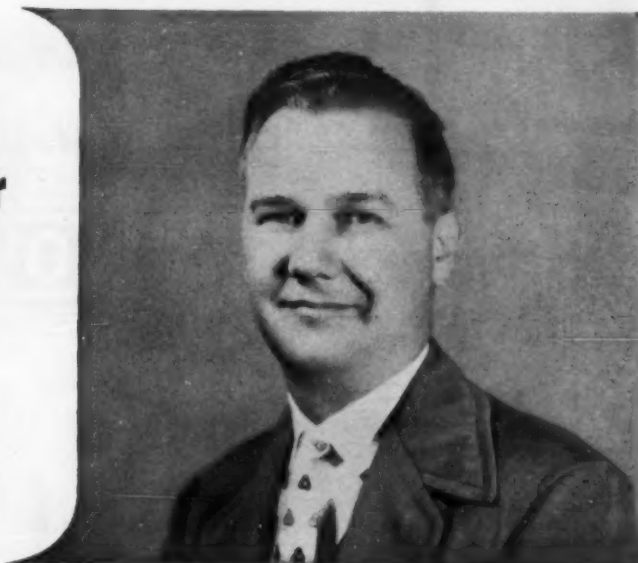
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Central Plant Heat Pump

Offers Reasons Why, How Utility Can Promote Sales

By H. M. Brundage, General Manager, Weathertron Dept., General Electric Co.*

We all see "all-electric year-round air conditioning" as the basic foundation for the all-electric home, and the only major tool known today or in the scientists' dream which can appreciably increase residential kwh. usage while at the same time make a major contribution to evening out load curves.

We should like to identify some of these marketing problems that apply to the central plant heat pump, one of the principal types of "all-electric" air conditioning.

*Excerpts from a talk presented before the Electric Space Heating & Heat Pump Conference.

The buying influences. These are the people who directly or indirectly influence the buying public. They are utility personnel from the president to the office boy, the architects, the consulting engineers, the bankers, the realtors, the building contractors, the builders, FHA, building inspectors, and a few more. In the first place these people are hard to reach because there are so many of them any one of which can have a direct influence upon a buyer.

Because of their numbers it will be years before they are all educated in this business. The number of people available

to talk to these buying influences is very limited.

Manufacturers cannot undertake this job. The type of man who can do an adequate contact job with utility personnel, carries no weight when talking with an old-time architect. The very magnitude of this job makes it self-evident that it is a slow tedious process but one which is vital to the successful marketing of this all-electric product.

Next, we must recognize that architects, consulting engineers, and many of the others feel that they have their professional reputation at stake. Professional people feel that they have to be absolutely sure before they give product endorsement. These

kinds of people are not venturesome with new ideas and new products. In fact they resist change.

To many of these influences, the concept of "all-electric living" means little or nothing. Their degree of acceptance of the "all-electric home" is in many cases substantially less than the buyer himself. Even when the president of a bank, an architectural firm, or even a utility understands and believes in heat pumps as a product and "all-electric living" as a way of

In his discussion "A New Look At the Heat Pump Market" at the Electric Space Heating and Heat Pump Conference held last month in New York, H. M. Brundage, general manager, General Electric's Weathertron Dept., told *why* public utilities should be backing sales of heat pumps, and also described *how* the utility can best promote heat pump sales.

Also provided in the accompanying excerpts from his discussion is a picture of heat pump sales up to the present, and a projection of future sales of heat pumps, and residential air conditioning sales in general.

life, it does not often filter down to the working level. When, to this we add the inexperience and the financial and business stability of the local dealer, these buying influences are not impressed or encouraged to back the product.

Anything less than a strong, aggressive endorsement of central plant heat pumps by the local utility constitutes a perfectly natural excuse for these buying influences to give passive or negative support to this product. Some utilities have tackled this problem in an aggressive manner and much progress has already been made. But I am sure that the full recognition of the importance and magnitude of the job, as applied to all five methods of attaining "all-electric year-round air conditioning," is not understood or evaluated in its true light.

Mfrs.' Problems

Another problem we, manufacturers, face is "Combination Utilities." Almost without exception, combination companies either directly lean to, promote, and advertise the gas business at the expense of the electric approach or are neutral, which is the same as being against it in the first place.

We know of only three major combination utilities in the country who today are actively supporting and promoting central plant heat pumps. The rest of them de-sell all-electric either directly or by the absence treatment. The gimmick of all-electric is still the strongest element in selling heat pumps today.

Acceptance Factor

Even with *straight electric utilities*, we have varying degrees of support of a heat pump program which we chose to call the "Utility Acceptance Factor." Depending upon local conditions, a given utility's "Acceptance Factor" is the sum total of their evaluation of such things as these:

1. Load Factor
2. Power Rates and their economics
3. Seasonal peaks, present, and future
4. Demand
5. C.O.P.
6. Reliability of equipment
7. Five methods of doing the job
8. Public relations as a result of high operating costs
9. Lack of knowledge
10. Promotionally minded
11. Just plain "Wait and See."

And a lot of less tangible items which might be called inertia. Obviously, no utility rates the central plant heat pump 100% on all of these factors. We still find a substantial number of straight electric companies who have not yet taken the time to seriously study this type of product as a load builder.

Then we have a real problem (Concluded on next page)

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Central Plant Heat Pump--

(Concluded from preceding page) like this could be typical of an area where gas cost is in the order of 8 cents per therm, electricity cost about 1 3/4 cents per kwh. and the annual system performance factor is about 2.5. Here is just the opposite situation in a Northern area. Cooling cost in each case is only \$50 per year. Gas heating cost at \$200 and heat pump at \$400, making total costs \$250 and \$450—a premium of \$200 or 80%.

The three factors affecting competitive costs are, of course, the electric rates, the C.O.P. of the heat pump, and competitive fuel rates. Our study indicates that higher electric costs are expected in the next 10 years but such increases will not be as much as these in gas rates. Heat pump C.O.P. has not been materially improved in the

Distribution Problem

The problem is magnified by the fact that distributors and dealers currently handling local problems of selling and installing central plant heat pumps have had no historical affiliation with electric utilities; and conversely electric utilities have had no reason to work with these particular distributors and dealers in past years.

Electric appliance dealers on the other hand have for many years had close affiliation with their utilities through promotional programs established by the utility and there has developed a healthy understanding of each other. To date, we have not been successful in distributing heat pumps through established appliance channels. This still remains a major problem.

The last problem which we will mention, but definitely not the last remaining problem, is the local dealers. The position of the installing dealer is vital to the success of the business.

Dealer Confidence

To cite just a few items that affect the degree of confidence generated by the dealer, is his experience in this product field, his local business and professional reputation, his affiliation with the local utility, the endorsement of the other "buying influences" as to his business ability, integrity, and stability.

As a manufacturer, we have a different type of question which we ask ourselves. For some period of years ahead there will be few such dealers who can make a livelihood selling heat pumps exclusively. They must, therefore, have other business interests, and so we ask ourselves—are these interests complimentary or competitive to the heat pump. What is their technical proficiency?

The study took a cold look at the effect of operating costs of central plant heat pumps vs. conventional combustion heating with electric cooling, on an area basis.

In the Southern case the cooling costs are, of course, equal for conventional gas-electric year-round systems and heat pumps at \$200, but heating costs are only one fourth of cooling costs—in this case \$50—of combustion equipment; \$50 for heating, \$200 for cooling.

If the heat pump cost on the heating cycle is twice the cost of gas, or \$100, the customers' premium is only \$50 or 20% on a year-round basis. A situation

past five years due to greater emphasis being given to improved reliability and reduction in product cost. Better C.O.P.'s are attainable which will contribute to more competitive operating costs—but no technology is known today which will gain C.O.P. improvement in Big Steps.

Unquestionably, better operating costs are more necessary and important in the areas where heating is the major consideration.

Another phase of our study had to do with promotional electric rates. We found that some winter heating and/or heat pump rates have been applied where summer peaks are experienced. In 1950 only four areas had such peaks. By 1956 many more had been created.

At least 11 areas now have such peaks, and six utilities had special rates. Summer peaks seem, therefore, to be the key to special rates, so we inquired

as to present and future expectations for summer peaks.

How many central plant heat pumps are installed. The fact gathering for the breakdown which will now be given is the most comprehensive available.

Heat Pump Sales Totals

In total, we found that there were just over 8,000 central plant heat pumps installed as of December 31, 1955, both residential and commercial. 3,077 were water source and 4,931 were air source. 70% of the water source units are installed in Florida. Installations were almost exactly 50% residential and 50% commercial.

In 1956 residential, central plant, packaged air conditioning went into new residences 52% and 48% to existing homes. Of this 52% to new construction, 94.4% were year-round systems and only 5.6% were cooling.

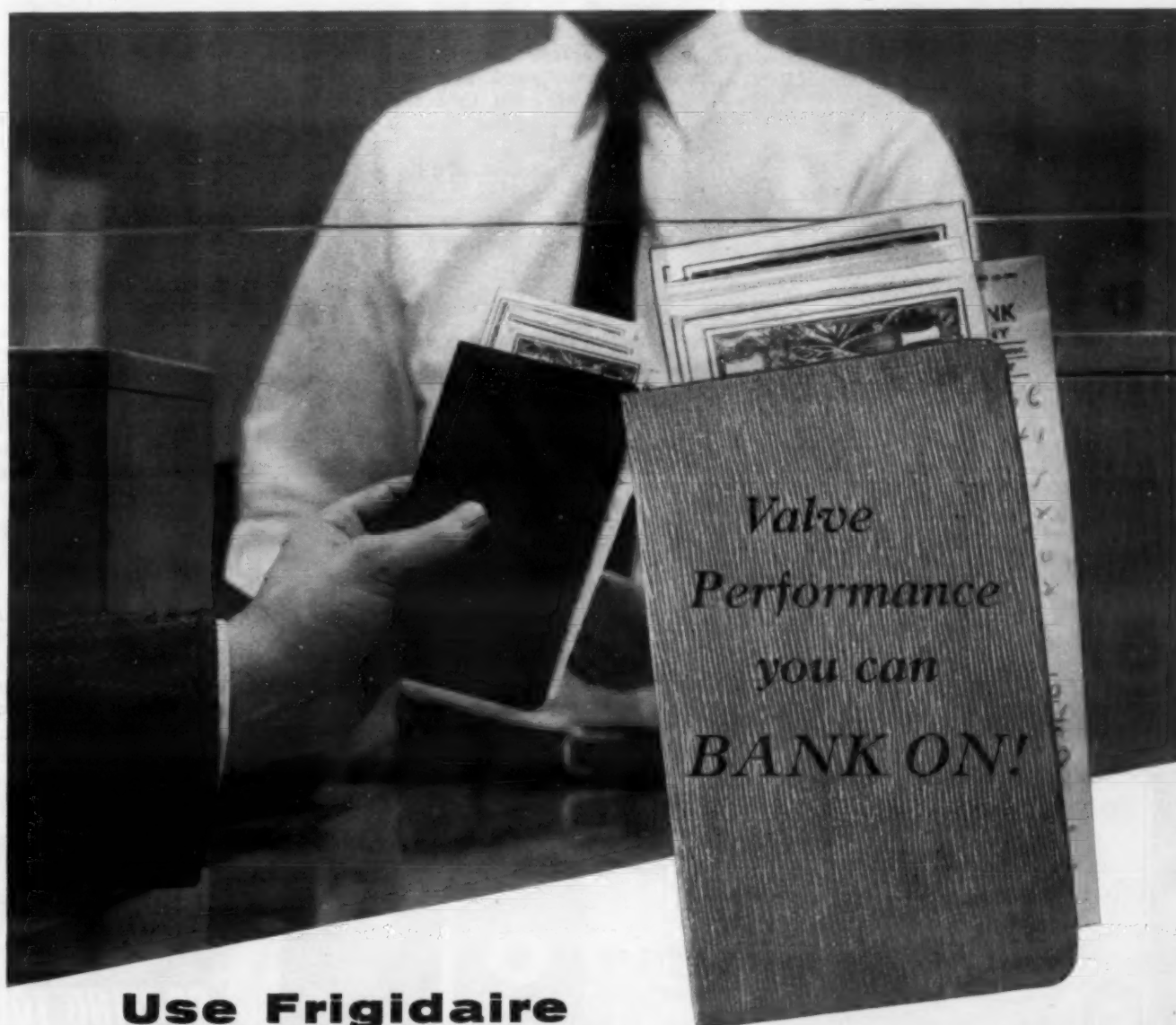
Of the 48% in existing resi-

dences, 14.6% installed year-round systems in 1956 and 85.4% installed cooling only.

Applying these percentages to the total residential single family housing starts in 1956, it would mean that 8 1/2% or 90,000 installed some form of central plant air conditioning, another 85,000 were installed in existing homes.

In our estimates for 1962 on residential, central plant, packaged air conditioning, the balance between new and existing homes will have changed from 52% and 48% in 1956 to 43% new construction and 57% in existing homes—and one important conclusion says that in 1962 29% of all new single family housing starts will install some form of central plant air conditioning.

The total market to be supplied by packaged central plant cooling and heat pumps looks like 870,000 units.



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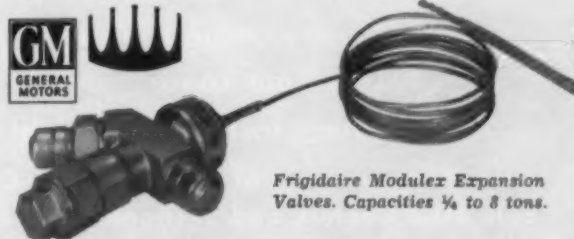
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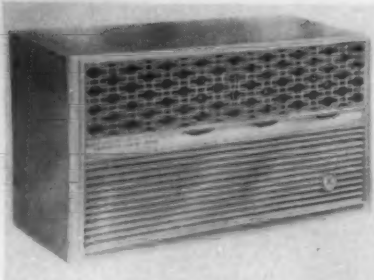


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PARTS AND ACCESSORIES

For more information about products advertised on this page use Information Center, page 18.



EMERSON Quiet-Kool Tru-Slim Air Conditioner.

Emerson-Quiet Kool

(Concluded from Page 1)

directional wheels, one-piece air tunnel construction, permanent filter, decorator styling, electrically operated dampers, double blower fan system with two fan motors on 1-hp. models, and complete fresh air and exhaust.

He added that it rounds out a full Emerson-Quiet Kool line of air conditioners, which includes four series "in every popular size from $\frac{3}{4}$ to 2 hp."

The new 1957 line consists of room air conditioners in the Tru-Slim, "Deluxe," "Super Compact," and "Super Dynamic" series. In addition, Emerson-Quiet Kool is making available the new "Thru-the-wall" series, designed especially for builders, as well as a line of residential and commercial air conditioners.

The full line retains many Emerson-Quiet Kool features

such as portability, choice of decorator colors, electronic "germ killer," "jet-scoop" dehumidification, "Power-saver" models, versatility of placement, and "other engineering advancements," according to the announcement.

Model No.	TRU-SLIM Description
7P7	$\frac{3}{4}$ hp., 115V, 7.5 Amp
7L7	$\frac{3}{4}$ hp., 115V, 7.5 Amp*
7P1	$\frac{3}{4}$ hp., 115V
7L1	$\frac{3}{4}$ hp., 115V*
7P2	$\frac{3}{4}$ hp., 230V
7P8	$\frac{3}{4}$ hp., 208V
9P1	1 hp., 115V, 12.0 Amp
9P2	1 hp., 230V
9P8	1 hp., 208V

*With Electronic Germ Killer

Model No.	DELUXE Description
7K7	$\frac{3}{4}$ hp., 115V, 7.5 Amp
7K1	$\frac{3}{4}$ hp., 115V
7K2	$\frac{3}{4}$ hp., 230V
7K8	$\frac{3}{4}$ hp., 208V
9K1	1 hp., 115V, 12.0 Amps
9K2	1 hp., 230V
9N2	1 hp., 230V†
9K8	1 hp., 208V

†Without thermostat

Model No.	SUPER COMPACT Description
E7G1	$\frac{3}{4}$ hp., 115V
E7J1	$\frac{3}{4}$ hp., 115V*
E7G2	$\frac{3}{4}$ hp., 230V
E7J2	$\frac{3}{4}$ hp., 230V*
E7G7	$\frac{3}{4}$ hp., 115V, 7.5 Amp.

*With Electronic Germ Killer

Model No.	SUPER DYNAMIC Description
E10G2	1 hp., 23V
E10J2	1 hp., 230V*
E10G8	1 hp., 208V
E10J8	1 hp., 208V*
E15G2	1½ hp., 230V
E15J2	1½ hp., 230V*
E15G8	1½ hp., 208V
E15J8	1½ hp., 208V*
E20G2	2 hp., 230V
E20J2	2 hp., 230V*

*With Electronic Germ Killer

Fort Worth Air Conditioning Seminar--

(Concluded from Page 1)

know when we have a proper markup to realize a profit.

"3. Pay close attention to our receivables. Stop billing speculative builders on open account terms and then wait for the building to be sold to collect what is due.

"4. Collect for labor and materials as the job progresses so that we do not tie up all our working capital in one or two jobs.

"5. Don't tie up all our capital in fixed assets.

"6. Arrange for a line of credit at the banks proportionate with the size of our business and reasonable demands we may expect."

BIG VOLUME INCREASE NEEDED TO COVER PRICE CUT

Contractors were also reminded by Cato that cutting prices to achieve more volume and thereby presumably more profit requires a greater increase in sales even to maintain present profit ratios than is commonly realized.

Based on a $33\frac{1}{3}\%$ markup (or 25% gross profit on sales), a 5% price cut requires 25% more sales; a 10% cut, 66 $\frac{2}{3}\%$ more sales; a 12½% cut, 100% more sales; a 15% price cut,

150% more volume, he said.

Perhaps the most "food for thought" in the seminar developed out of a presentation on overhead made by veteran contractor Paul V. Barmann of Lydick-Barmann Co. who asked the audience to supply minimum cost figures on a detailed breakdown of overhead expense for a firm doing a \$160,000-a-year business.

With a bare minimum of \$40,000 in overhead (including owner's and salesman's salaries), Barmann demonstrated that a gross profit of 25% (or 33½% markup on cost) would result in the firm's only breaking even on \$160,000 in sales.

OVERHEAD RISES FASTER THAN VOLUME

"You can't win simply by operating on volume, because overhead increases much faster than volume," Barmann emphasized.

"Two possible answers for the above theoretical firm can be to reduce overhead or raise the markup, but since the overhead is already actually too low, you'll have to increase the markup," said Barmann. "And your answer to this is true salesmanship."

Some reminders about what constitutes good salesmanship were presented by Frank B. Self of A & M Supply Co., who told the contractors that the four reasons a prospect buys from a particular contractor are, in order of importance, (1) name of the product, (2) performance and service, (3) the seller himself, and (4) price.

'PRICE' HAS BECOME PARAMOUNT IN THINKING

"The word 'price,' unfortunately, has become paramount in our thinking," Self complained. "But if price were most important in selling, the Kaiser car, for example, would be the biggest seller, and you all know what happened to Kaiser."

In another talk H. B. Everett,

Jr. of Almar-York Co., Inc. showed contractors how to best use the air conditioning estimate sheet developed by the Fort Worth association last year.

This estimate sheet, he explained, was designed for the smaller contractor in particular and can be used for jobs up to 25 or 30 tons in size. Its chief value, Everett indicated, is as a check list to help the contractor avoid forgetting any phase of the job in making his cost estimate.

"When you make an error in your estimate, either it will be too high and you won't get the job or it will be too low, which can mean money out of your pocket," he warned.

A method of estimating ductwork costs which has been developed by Webb Air Conditioning Co., local contractor which is claimed to provide a fast but accurate way of figuring these costs was outlined by Grant H. Johnson of the firm.

Principles of accounting methods and procedures were reviewed by George F. Neal of the Fort Worth branch, Frigidaire Sales Corp., who explained that accounting goes farther than bookkeeping "by explaining the results obtained from bookkeeping as to how the business is being operated and as to what the financial position of the business is."

Patterson Elected To Head Recony Firm

RICHMOND, Va.—V. C. Patterson has been elected president of Recony Sales & Engineering Corp. here, formerly Reco Sales & Engineering Corp., New York City.

During the past 12 years Patterson has been actively engaged in consulting engineering for the ice cream, frozen foods, and cold storage industries.



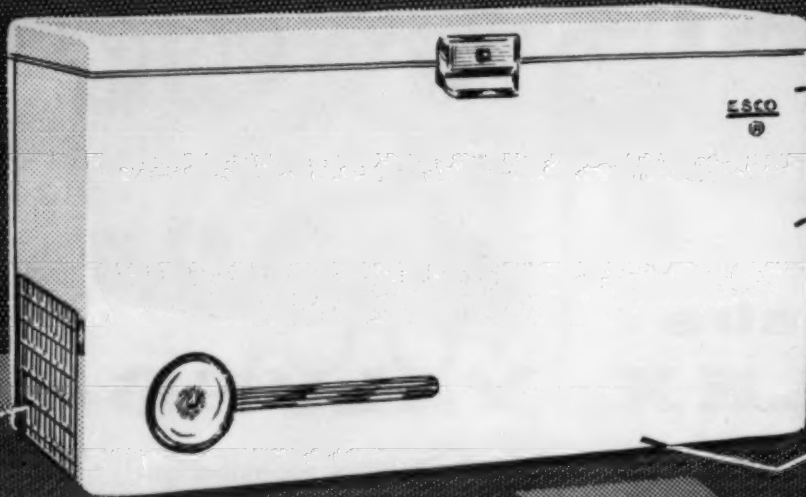
V. C. Patterson



"Whisper Quiet" Freezer Line for 1957

OUTVALUES ALL OTHERS

5 different ways



1. Quiet as a whisper
2. Radiant shell condenser, non-sweat construction
3. More storage capacity
4. Less floor space
5. Lower cost per cubic foot

Also Manufacturers of Can-Type Milk Coolers, Bulk Milk Coolers and Sectional Cold Rooms.

Write today for full information and prices.

ESCO CABINET CO., WEST CHESTER, PA.

SO HALSTEAD & MITCHELL ENGINEERS SAID:

"LET'S STOP COOLING TOWER RUSTING and ROTTING!"



Halstead & Mitchell

BESSEMER BUILDING, PITTSBURGH 22, PA.

RUSTING

There's no "one-coat" protection which will stop cooling tower rust. Needed are super-strength bonding of protection to metal, toughness, inertness, flexibility, and a water-tight barrier. Only by Halstead & Mitchell are you offered the 3-coat protection of Vinsynite, Vinyl Zinc and chlorinated rubber—the most advanced protection ever devised to prevent cooling tower steel from rusting.

ROTTING

We do more than praise the long life of wood used in our wetted decks—we are the only manufacturer who offers a 20-Year Guarantee on wetted deck wood against rotting or attack by fungus.

AT LEADING WHOLESALEERS EVERYWHERE

Mfrs. Move To Aid Dealers--

(Concluded from Page 1, Col. 4)
held here last week, C. W. Theleen, customer relations manager for General Electric's Appliance & Television Receiver Div., detailed G-E's new builder sales program and also explained the company's policy on metropolitan retail service.

He said these are two areas about which there have been "confusion and misinterpretation."

One of the major provisions of G-E's "Contract Sales Plan," dated last Oct. 1, is that bonuses are available only on projects involving a minimum of 50 of any one appliance or a minimum

of 100 assorted appliances. Only exception is room air conditioners, the minimum on which is 25.

Also, the transaction must represent a bona fide sale to a single builder for installation and use in a qualified project.

Another provision is that the builder credits described in the "Bonus Plan" are "applicable to project builder business whether sold direct by the distributor or through intermediate channels, such as retailers."

Discussing builder business, Theleen said that distributors traditionally have been in the best position to compete for sales to government projects, apartment houses and hotels, and very large residential tracts. Selling appliances to small and medium builders offers better profit opportunities to dealers, he stated.

'ENCOURAGED TO GET' BUILDER BUSINESS

He also asserted that General Electric "has for years encouraged dealers who want to go after the builder business. Provisions of all our builder sales plans have been applicable to builder sales made by dealers as well as to those made directly by distributors. Unfortunately, dealers have not taken advantage of these plans to any great extent."

The company's chief concern in the matter of appliance and TV service is to make sure that it is available for G-E products, Theleen said, and the responsibility for this rests with wholesale distributors. Distributors provide service with their own men and through franchised servicing dealers, he explained. Both dealers and independent servicemen are supplied with General Electric parts and product information, he stated.

"We are not trying to take over the entire service function," Theleen declared. "On the contrary, we think it would be wonderful if we could interest and develop more good and capable servicemen, including independents, to help us get this important job done."

Theleen referred to a series of ads which G-E ran in *Life* and *Saturday Evening Post*. He said they "stirred up a lot of comment, some favorable and some critical." (The ads, which urged the public to depend on "authorized G-E service for fast and friendly action," were criticized by many servicing dealers and independent service firms who resented references in the ads to their "snail's pace" repair work.)

SERVICE SITUATION

Early this year, G-E, in effect, ditched plans to set up factory service branches in markets where good independent service was unobtainable. It switched TV set parts distribution back to franchised distributors from factory branches, established a training program for independent servicemen, and indicated that independent service operations would be promoted in future national advertising.

"Independent Service vs. Factory Service" was one of the topics discussed at the NARDA convention. A good share of the discussion was on TV service.

However, one of the symposium speakers—W. B. Creech, manager, major accounts, Major Appliance Div. of Westinghouse, described his company's metropolitan appliance service operations.

He stressed that "our metropolitan service operations are not a recent approach to the growing service problem but have been an inherent part of our appliance distribution function and the average age of these service operations is over 20 years."

Creech said Westinghouse made a survey a couple of years ago covering a sample of our dealers in cities of 100,000 population and under. "This showed," he stated, "that a substantial percentage of our dealers in small markets were contracting for service through a recognized independent service organization."

Creech also declared: "It is organizationally and economi-

cally sound to have a large central service organization for all our products in a metropolitan market. With such an organization, it is possible to develop product service specialists. . . . But only heavy volume can support such specialists.

"The philosophy of emphasizing metropolitan service is not at odds with the fact that in most of the areas where we have central operations, we also have good servicing dealers. Such dealers use service as a strong sales tool and we support these dealers in every way we can."

Dealer complaint regarding cooperative advertising is that the big share of it is going to certain key dealers who have even been making money on it. Some producers reportedly have been mapping changes to meet this criticism.

Last week, Philco disclosed that it soon will make available through its distributors a new local cooperative advertising

program. Voluntary on the part of distributors, the experimental plan calls for a series of full-page dealer listing product ads for 21 weeks in a row and will permit smaller independent dealers to identify themselves as headquarters for Philco products, it was said.

Max Enelow, director of advertising for Philco was quoted as saying that the program is not an effort to by-pass the volume dealer, who "will continue to play a major role in Philco's advertising program."

Another manufacturer move said to be in the works is Hotpoint's plan to franchise dealers interested in built-in appliances as "custom kitchen specialists" to advise and sell small builders and their customers.

Although Hotpoint's attempts to interest dealers in selling built-ins haven't been very successful, the company still considers such appliances as "the future of the business."

No. 1 in a series on refrigeration

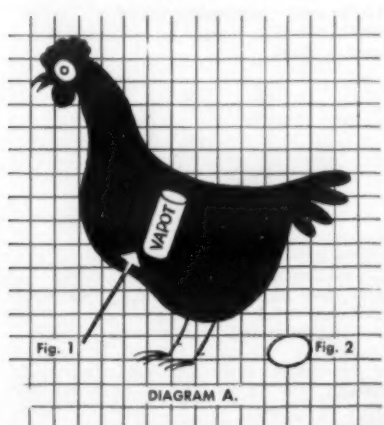


Diagram A, above, represents a device used in egg production. The technical word for it is **hen**.

Components are fed into a hopper, gulleled, conveyed to a processing room and thence to a packaging department. The end product (Fig. 2) is known as an egg.

How it got to be an egg doesn't interest egg buyers. Egg buyers just want eggs. Good eggs.

And users of refrigeration want refrigeration. Good refrigeration.

However, one of the working parts of most soundly engineered hens is something the name of which escapes us at the moment, but it corresponds to **VAPOT**. (Fig. 1.)

In a simple ice cream storage box or in the complex refrigerated hold of a ship, **VAPOT** is a small not-too-costly working part. It defrosts. Quickly and at the right time it dispels frost and ice without raising temperature detrimentally. There are alternate devices that defrost. We can quickly prove that **VAPOT** defrosts faster with less rise in temperature and that it reduces the cost of refrigeration.

If you build, sell, buy, design or install refrigeration you will be astounded when **VAPOT** is explained to you and/or your engineers. Architects should find out about it too.

VAPOT is one of many specialties used in refrigeration and air conditioning . . . made by us.



REFRIGERATION ENGINEERING, INC.
7250 E. Slouson Ave., Los Angeles 22, Calif.
Phone: RAYmond 3-3281

HAVE YOU AN AIR MOVING PROBLEM?

let Marco Motors spell out your solution

**M
A
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mass-production priced.

any quantity—100 or 100,000—delivery guaranteed.

rigid quality control for quiet, smooth operation.

custom designed to your specifications.

one product . . . performance proved motors . . . over 6 million now in use.

Since 1946, Marco Industries, Inc., has become the leading manufacturer of shaded-pole and permanent split-capacitor motors for the air-condi-

tioning industry. For application details and illustrated literature call the engineer nearest you or write direct to us today.

these application engineers are equipped to give you full cooperation

Greater New York City Area—W. E. Macbeth, 88 Cooper Drive, New Rochelle, N. Y., Phone: New Rochelle 2-0802
Upper New York State—Milton C. Matthews, P.O. Box 612, Rochester 2, N. Y., Phone: BRowning 2143
Cleveland Area—Commercial Electric Co., 1250 St. Clair Ave., N.E., Cleveland 14, Ohio, Phone: CHerry 1-2886
Chicago Area—Spartan Engineering Co., 119 S. Jefferson St., Chicago 6, Ill., Phone: CEntral 6-3905
Michigan—Arthur A. Reed, P.O. Box 11, Royal Oak, Mich., Phone: Lincoln 2-6036.

Texas-Oklahoma Area—Allied Components, Inc., Petroleum Services Building, 3918 Harry Hines Boulevard, Dallas 19, Tex., Phone: LAkeside 8-4943
St. Louis-Memphis-Little Rock-S. Illinois Area—R. W. & O. A. Baumann, Jr., 575 Arcade Building, St. Louis, Mo., Phone: CEntral 1-1677
Kentucky-Southern Indiana-Ohio (except Cleveland) and Pittsburgh Area—Row-Con, Inc., P.O. Box 3, Debal Station, Dayton, Ohio, Phone: KEEnmore 9152
Southeastern States—Joe E. Parker Company, P.O. Box 367, Northside Station, Atlanta 5, Ga., Phone: MEIrose 4-2451

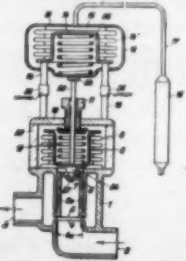


MARCO INDUSTRIES, Inc.
WOMELSDORF, PENNSYLVANIA

PATENTS

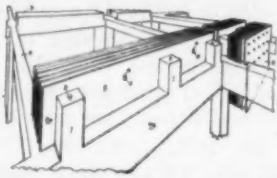
Week of August 21
(Concluded)

2,759,674. THERMOSTATIC SUCTION PRESSURE REGULATOR FOR REFRIGERATION INSTALLATIONS. Hans Jorgensen, Hamburg, Germany.



1. A suction pressure regulator for compression refrigerators, comprising, in combination, a cooling chamber, a temperature and pressure responsive valve associated with said cooling chamber, said valve including a pressure control device including a first container having a first movable wall portion controlled by the pressure of the conduit for the refrigerant, said valve including a temperature control device including a second container having a second movable wall portion controlled by a fluid having a volume dependent on the temperature thereof, said fluid being influenced by the temperature in said cooling chamber, said pressure control device and said temperature control device being arranged at a distance from each other in a unitary assembly, columns rigidly connected, respectively, to said pressure control device and said temperature control device, unions detachably connecting, respectively, said columns, and a spindle coupling said pressure control device and said temperature control device so as to effect changes

2,759,719. COOLING TOWER FOR LIQUIDS. Arthur Odenthal, Bochum, Germany, assignor to Maschinenbau-Aktiengesellschaft, Balcke, Bochum, Germany.



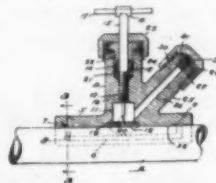
1. A cooling tower comprising a frame structure including first substantially horizontal beams and second substantially horizontal beams disposed at an angle to said first beams, a plurality of sets of individual parallel and substantially vertical cooling plates, said plates having laterally protruding marginal portions resting on opposite ones of said beams, and spacing means individually loosely supported by and extending from the surface of every other of said plates and abutting against the surfaces of the two neighboring plates which surfaces individually face the surfaces of the plates supporting the spacing means, said frame structure including spacer portions extending vertically upwards from said substantially horizontal beams and being abutted by the spacing means supported by the plates at the extreme ends of said sets.

REISSUES

24,190. PIERCING VALVE. John W. McDonald, Grapeland, Pa. Original No. 2,608,989, dated Sept. 2, 1952, Serial No. 72,187, Feb. 24, 1949.

4. A piercing valve adapted to be selectively mounted on a fluid container to control the ingress and egress of fluid with respect to said container, comprising: a valve body having an axial passage therethrough; an angularly disposed boss having an axial bore therethrough that communicates

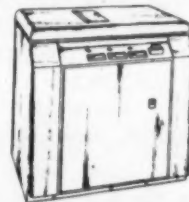
with said axial passage through said valve body; a valve stem axially shiftable with respect to said passage and having an axial socket at one end thereof; a piercing needle received in



said socket of said valve stem; a packing recess communicating said passage with the exterior of said valve body and having the seat area thereof defined by said passage, whereby said seat is spaced with respect to one surface of said container; a resilient packing receivable against said packing seat; and means for securing said piercing valve with respect to said container.

DESIGNS

178,566. VENDING MACHINE FOR ICE CREAM BARS OR THE LIKE. Fred Hebel, Wilmette, Ill., assignor to Fred Hebel Corp., Addison, Ill.



178,570. REFRIGERATOR. Burt E. Hyde, Omaha, Neb. Application July 11, 1955, Serial No. 36,917.



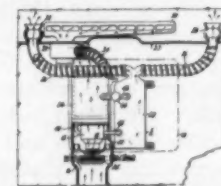
on said pressure responsive device decreases, a solenoid energized by said pressure actuated switch when the switch is closed, a valve in said fluid connecting means, said valve being operable to the open position when said solenoid is energized thereby permitting flow of material from said source of material to the cylinder of the freezing and dispensing apparatus.

2,760,346. REFRIGERATING APPARATUS OF DISSIMILAR METALS. Leland H. Grenell and Clifford H. Wurtz, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich.



4. In a refrigerator, a cabinet having a food storage compartment therein, an evaporator in said compartment, refrigerant liquefying means for supplying liquid refrigerant to said evaporator and for withdrawing vaporized refrigerant from said evaporator, said evaporator having a refrigerant passage formed therein, said passage having an inlet end and an outlet end merging into a common passage, refrigerant flow means connecting said evaporator in refrigerant flow relationship with said refrigerant liquefying apparatus and including an inlet tube member extending into said end of said refrigerant passage for delivering liquid refrigerant into said refrigerant passage, said refrigerant flow means including an outlet tube member surrounding said inlet tube member and connected to the outlet end of said common passage for withdrawing refrigerant vapor from said refrigerant passage, and means adjacent the entrance of said inlet end of said passage for blocking the flow of refrigerant between the outer wall of said inlet tube and the inner wall of said refrigerant passage.

2,760,347. SELF-CONTAINING AIR CONDITIONING UNIT IN AN AUTOMOBILE. John Dolis, Davisburg, Mich., assignor to General Motors Corp., Detroit, Mich.



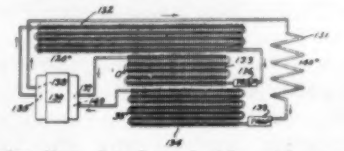
1. A self-contained air conditioning unit for mounting in a passenger automobile having an engine in an engine compartment and having a passenger compartment separated from the engine compartment by means of a dashboard, housing means adapted to be supported in said engine compartment, said housing means having a longitudinally extending chamber having an air intake opening at its front end for receiving outside air, a compressor disposed within said chamber and adapted to be driven by the main car engine, a condenser in said chamber, said compressor having an operating shaft, fan means secured to said shaft for forcefully circulating air through said chamber, said housing means having an evaporator chamber formed therein, an evaporator within said chamber, refrigerant flow connections between said evaporator, compressor and condenser, means for introducing air to be conditioned into said evaporator chamber adjacent one side of said evaporator, and means for conducting air leaving said evaporator chamber into the passenger compartment of said automobile.

2,760,348. MOTOR-COMPRESSOR IN PLURAL TEMPERATURE REFRIGERATING SYSTEM. Harry H. McAdam, San Carlos, Calif., assignor to Wetmore Hodges, Redwood City, Calif.

12. A closed vapor-compression system, including in combination a compressor, having a pressure vessel,

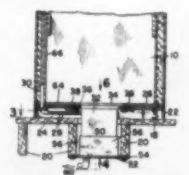
1. In a system for controlling the feed of material to a freezing and dispensing apparatus of the type having a freezing cylinder with intake and discharge ports at opposed ends thereof and a mechanism for conveying material entering the intake port to the discharge port while it is being frozen: a source of material to be frozen, fluid connecting means between said source of material and the intake port of the cylinder of the freezing and dispensing machine, a pressure responsive device mounted on the discharge end of said cylinder and responsive to the pressure of material caused by the mechanism for delivering the material to the discharge port, a pressure actuated switch connected to said pressure responsive device, said switch being closed when the pressure reflected

means for forming a plurality of continuously expanding chambers inside said pressure vessel constituting the intake side of said compressor, means for forming a plurality of continuously



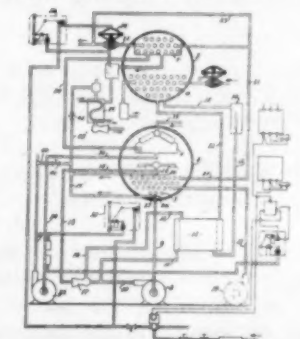
contracting chambers inside said pressure vessel, constituting the discharge side of said compressor, a plurality of ports through the walls of said pressure vessel communicating with the chambers on one side of said compressor, said ports being so spaced that no chamber can at any time bridge between said ports, and at least one port on the other side of said compressor, so that fluid may be moved into, through, and out from said compressor; fluid condensing means connected directly to each discharge port for valveless operation therewith; fluid evaporating means connected to said condensing means and directly to each said intake port for valveless operation therewith; and liquid control means between said condensing means and said evaporating means.

2,760,349. REFRIGERATOR CONSTRUCTIONS. Louis A. Valenti, Worcester, Mass.



1. A refrigerator adapted to be set on a supporting floor and comprising an insulated box having a floor, an evaporating device in the box, a compressor and condensing unit, a flexible hose connecting the unit to the evaporator at all times, said unit being self-contained and selectively located to depend from the floor of the box therebelow or to be located wholly within the box, means to hold said unit in selected position, and means providing for circulation of waste heated air from the condenser below the refrigerator floor, said means including a housing, means to telescopically adjust the housing with respect to the unit, said housing having a position beneath the supporting floor.

2,760,350. ABSORPTION REFRIGERATION SYSTEMS. Joseph R. Bourne, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



1. In a method of operation of an absorption refrigeration system including an evaporator, an absorber, a generator, and a condenser, the steps which consist in utilizing the absorption refrigeration system to cool water, utilizing the cooled water to remove heat from a load, circulating solution between the absorber and the generator and, upon shutdown, forwarding cooled water from the evaporator through a purge line of the system to the absorber to mix with solution in the absorber while continuing circulation of solution in the system and discontinuing operation of the system.

2,760,353. FRESH AIR AND EXHAUST CONTROL MECHANISM FOR AIR CONDITIONING APPARATUS. Donald Kuhlenschmidt, Newburgh, and D. C. Vasseur, Evansville, Ind., assignors, by mesne assignments, to Whirlpool-Seeger Corp.

1. In a room air conditioning unit, the combination, comprising: a cabinet having a partition therein, and defining with said partition an outer

(Concluded on next page)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

SERVICE MANAGER with twelve years' experience on commercial air conditioning and refrigeration, factory training on Thermo King truck units, Carrier and Hussmann. Sales engineering training and selling experience on package equipment. Age 38. BOX A5722, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

TERRITORIES AVAILABLE for experienced salesmen of air conditioning and heating equipment. Write W. B. LONGSHORE, Box 60, Gadsden, Alabama.

REFRIGERATION FIELD service-men: experience preferred, but not essential on environmental test equipment for leading manufacturer. Company benefits, replies confidential. Please contact TENNEY ENGINEERING, INC., 1090 Springfield Road, Union, New Jersey.

ESTABLISHED MANUFACTURERS' representative calling on refrigeration men, to sell complete line of commercial refrigeration in Michigan and Indiana. THE C. SCHMIDT COMPANY, 1712 John Street, Cincinnati 14, Ohio.

MAN, THOROUGHLY familiar with refrigeration and air conditioning equipment and supplies, to become counter-man for wholesaler of refrigeration supplies. Counter experience preferable but not essential. Permanent, good opportunity. P.O. BOX 63, Long Island City 3, N. Y.

AIR CONDITIONING sales engineer—M.E. degree or equivalent with sales experience for nationally-known manufacturer of compressors, condensing units, water chillers and cooling towers 5 to 60 tons. Sold through manufacturers agents to contractors. Traveling required. Profit-sharing plan. Write fully as to experience, education, salary earned and desired, etc. to BOX A5710, Air Conditioning & Refrigeration News.

EXPERIENCED COMMERCIAL refrigeration field man for New York, Pennsylvania, Michigan or Indiana. Draw and expenses or straight commission. Established manufacturer. Must be able to sell top quality. Inquiries confidential. Write BOX A5718, Air Conditioning & Refrigeration News.

AIR CONDITIONING man experienced in calculating and estimating year-round air conditioning for large national plumbing and heating concern central Ohio. State experience, full particulars. BOX A5723, Air Conditioning & Refrigeration News.

WANTED: MANUFACTURERS' agents and representatives for leading line of diffusers and grills. Many territories open. Write BOX A5725, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED: MANUFACTURERS surplus, outdated or obsolete refrigeration items—expansion & water & shutoff valves, controls, relays, dehydrators, units, tubing, fittings, etc. All sales on a cash close-out basis, large or small quantity. Write or call: COMMERCIAL CONTROLS CO., 257 East 3rd Street, New York 9, N. Y. ORegon 3-7210.

EQUIPMENT FOR SALE

NOW AT your local wholesaler guaranteed 20 foot lift new Kesco King Size 1957 automatic condensate water disposal pumps. 3 inches water in tank starts pump. Designed for air conditioners, ice cube bins, drinking fountains. Wholesalers, for 1957 literature write to KESCO PRODUCTS CORP. Box 84, Springfield Gardens 13, New York.

HERMETIC REBUILDING plant being liquidated. All machinery, office equipment and inventory for sale. Sale begins February 13. Equipment and materials may be seen on premises prior to sale. Brochure of same available upon request. Call or write MODERN REFRIGERATION COMPANY, 12541 E. McNichols, Detroit 5, Michigan, Lakeview 6-4300.

WE HAVE 300 Dole vacuum freezer plates 21 x 21 all new packed 10 to a crate. Will sell cheap any part. F.O.B. St. Louis, Mo. SUPERIOR REFRIGERATOR MFG. CO., 822-4 Hodiamont Ave., St. Louis 12, Missouri.

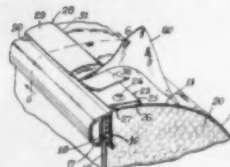
SPECIAL—WHILE supply lasts—1½ h.p. compressors with flywheels and valves \$80. each, f.o.b. factory. Also two and three ton evaporators available at reduced cost. Write BOX A5724, Air Conditioning & Refrigeration News.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR; 2833 Lincoln Avenue, Chicago 13, Illinois.

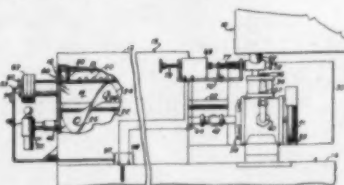
Week of August 28

2,760,301. UPHOLSTERED REFRIGERATOR CABINET. Elmer B. Derr, Oak Park, Ill., and Benton Dales and Henry C. Abrahamsen, Evansville, Ind., assignors, by mesne assignments, to Whirlpool-Seeger Corp.



1. Means for removably affixing a decorative covering material to the surface of a cabinet or like structure, comprising: a trim retainer strip secured to the cabinet surface; said retainer strip being fashioned in the form of a channel and being disposed so that the mouth of the channel faces the cabinet surface to be covered, while a generally flat outer face portion of the channel faces away from the cabinet surface; a pressure sensitive double-faced removable adhesive tape adhesively applied to the outer face of said retainer strip; said tape having an adhesive outer surface for the application of the covering material thereto; and a protecting trim strip shaped to conform to the retainer strip and adapted to cover said retainer strip and simultaneously therewith to engage and hold the covering material against the adhesive tape and upon said retainer strip.

2,760,344. AUTOMATIC FEED FOR ICE CREAM FREEZERS. Harold P. Olts, Miami, Fla., assignor to Ar-Tik Systems, Inc., Miami, Fla.



1. In a system for controlling the feed of material to a freezing and dispensing apparatus of the type having a freezing cylinder with intake and discharge ports at opposed ends thereof and a mechanism for conveying material entering the intake port to the discharge port while it is being frozen: a source of material to be frozen, fluid connecting means between said source of material and the intake port of the cylinder of the freezing and dispensing machine, a pressure responsive device mounted on the discharge end of said cylinder and responsive to the pressure of material caused by the mechanism for delivering the material to the discharge port, a pressure actuated switch connected to said pressure responsive device, said switch being closed when the pressure reflected

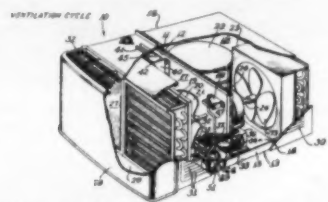
WANTED REGIONAL SALES MANAGER FOR MIDWEST

The Gibson Refrigerator Company of Greenville, Michigan, has an opening for a capable man who has a complete knowledge of the commercial and residential air conditioning and heating business. The man we want must have experience in selling 3 to 40 ton air conditioning equipment, oil and gas fired furnaces. To qualify, he should be of the executive type with ability to set up his own distribution. This position pays top money to the right man. Call or write J. L. Johnson, vice president, Gibson Refrigerator Company, Greenville, Michigan.

PATENTS

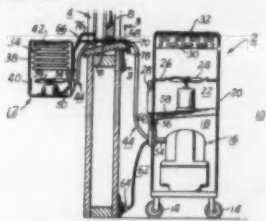
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apparatus compartment and an inner cooling compartment; said inner cooling compartment having an air outlet and a plurality of air inlets communicating with a room to be cooled; said



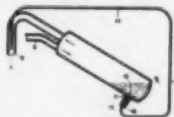
outer apparatus compartment having an air inlet and an air outlet communicating with the outside atmosphere; said partition having a first opening therein communicating with the outer apparatus compartment and with the room to be cooled for exhausting air from the room, and a second opening therein communicating with the inner cooling compartment and with the outside atmosphere for admitting fresh air to the room; a canopy-like shield formed with an inclined wall and defining an air passageway disposed within said inner cooling compartment connecting said first partition opening with one of the said air inlets from the room to the inner cooling compartment; said inclined canopy wall having an opening therein communicating with said inner cooling compartment; a first damper member hingedly mounted and operative for positioning in one position closed over said first partition opening and in a second position closed over said inclined canopy wall opening; a second damper pivotally mounted over the second opening in said partition; mechanism operatively connecting together said two damper members and arranged so that said damper members are selectively positionable by operation of a single control element to a first position with the two dampers closed over the partition openings, to a second position with the first damper closed over the first partition opening and the second damper open, and to a third position with the first damper closed over the canopy wall opening and the second damper closed over the second partition opening, whereby air in the room is respectively recirculated, supplemented with fresh air from outside atmosphere, and exhausted to the outer apparatus compartment.

2,760,354. PORTABLE AIR CONDITIONING UNIT. Lawrence P. Brady, Brewster, and Frank B. Carbone, New York, N. Y.



1. In a unit air conditioner, the combination of, a moveable casing construction which is adapted to be positioned within a conditioned space adjacent an outside opening, a refrigeration system which includes a condenser and which has all of its elements except said condenser mounted within and upon said casing construction, bracket means for said condenser and adapted to support said condenser in a position outside of the conditioned space, and a flexible cable connecting said condenser with said casing construction, said cable including plastic refrigerant lines connecting said condenser with the appropriate elements of the refrigeration system within said casing construction and a flexible plastic structure forming a passageway for the refrigerant lines and a passageway through which fresh air is drawn into the conditioned space.

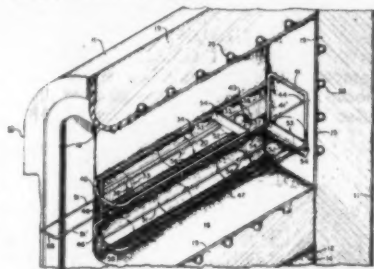
2,760,355. METHOD OF RETURNING OIL FROM AN ELEMENT OF A REFRIGERATION SYSTEM TO THE COMPRESSOR THEREOF. Richard H. Swart, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Original application Dec. 15, 1948, Serial No. 65,487. Divided and this application May 22, 1952, Serial No. 289,233. 2 Claims.



2. In a method of returning oil from a first zone of a refrigeration system to a second zone of the refrigeration system, the steps which consist in collecting oil and liquid refrigerant in the first zone, substantially separating oil and refrigerant into layers in the first zone, inducing the layer of oil from the first zone through a conduit exposed to ambient atmospheres and returning the oil to the second zone by the passage of gaseous refrigerant from a third zone to a second zone, then when oil has been substantially

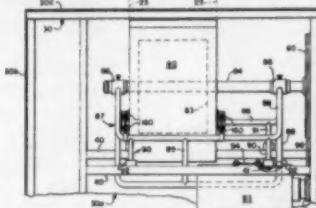
exhausted from the first zone, permitting liquid refrigerant in the first zone to enter the conduit, vaporizing liquid refrigerant in the conduit to produce a series of bubbles, and utilizing the bubbles so produced to restrict the outlet of the first zone thereby restricting free flow of liquid refrigerant through the outlet.

2,760,649. REFRIGERATING APPARATUS. Francis I. Ratacsak, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



A rack device for use in a refrigerator cabinet food storage compartment having at least three upright walls and a front opening, said rack device being narrow as compared to the width of said compartment and disposed along one of said upright side walls thereof unsupported from said other walls, said rack device comprising a unitary framework including a vertically elongated rear portion, spaced upper and lower horizontal U-shaped wire portions having the end of the legs thereof secured to said rear portion and extending forwardly thereof to provide vertically spaced apart sets of guides, a connector on one side of the forward portion of said guides to maintain said sets thereof in vertically spaced relation and a mounting strap extending between said connector and said vertically elongated rear portion adapted to be attached to said one compartment wall for stationarily securing said framework in said compartment, said rack device also comprising separate and independent slides on each of said sets of guides, each slide being adapted to receive and support a row of cans of juice or the like in end to end relationship thereon, each of said slides being in the form of a flat U-shaped horizontally disposed single wire located between the legs of a guide, the legs of each of said flat U-shaped slides being longer than said U-shaped guides with the forward portion of a slide overlapping and resting upon the right portion of its respective guide, means slidably supporting the ends of the legs of said U-shaped slides on the legs of said guides, and the flat right portion of each of said U-shaped wire slides serving as a stop to prevent shifting of a can off same when a slide is moved relative to the framework of said rack device.

2,760,718. CENTRIFUGAL TYPE FAN MOUNTING ARRANGEMENTS. William F. Borgerd, Evansville, Ind., assignor, by mesne assignments, to Whirlpool-Seeger Corp., a corporation of Delaware. Original application April 20, 1953, Serial No. 349,594. Divided and this application Sept. 29, 1954, Serial No. 459,047. 10 Claims. (Cl. 230-117.)



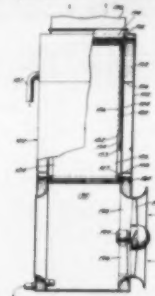
1. In an air-conditioning system, a centrifugal fan comprising a housing mounted in said system, a rotor, a shaft, said rotor rigidly mounted upon said shaft, a pulley, said pulley rigidly mounted upon one end of said shaft, means for supporting said shaft in cooperation with said housing, said means comprising a pair of bearings, each of said bearings mounted about said shaft approximately at the opposite ends thereof, a plurality of elements, each of said plurality of elements rigidly attached to said bearings to support said bearings, a plurality of legs mounted to each of said plurality of elements, resilient damper elements mounted to each of said legs, said resilient damper elements mounted in said system so that the said rotor of said fan is rotatively mounted in said housing with a maximum support and a minimum of vibration, a motor for the operation of said fan, a pulley mounted on the armature shaft of said motor, a bracket, one end of said bracket rigidly attached to the body of said motor, the other end of said bracket formed as a bearing and positioned about one of said plurality of elements, whereby said motor is pivotally mounted thereabout, a fan belt, said fan belt mounted about said pulleys whereby said motor presses against said fan belt to maintain a tension on said fan belt dependent upon the weight of said motor and whereby said motor is mounted within said system with a maximum of support and a minimum of vibration.

2,760,764. COOLING TOWERS. Paul Orzel, deceased, late of Bogota, N. J., by Elly Orzel, administratrix, Bogota,

N. J., assignor to said Elly Orzel, personally, Joseph Lichtenstein, Bayside, N. Y., and William J. Rooney, White Plains, N. Y.

1. In combination, an upright casing having outer and inner spaced walls and horizontal partitions connecting the walls and forming superposed end-less closed upper warm water and lower cold water storage troughs comprising sections joining at right angles and surrounding an air space open below and above for the upward flow of cooling air entering at the lower part of the space; opposite sections of the upper part of the inner walls being provided with upper and lower vertically elongated spaced

openings communicating with the troughs; a channel header sheet ad-



jacent to each of said opposite sections of the upper trough and having upper openings registering with the upper openings of the upper trough; upwardly open upper distributing channels having lower flat faces and upper overflow edges all in the same plane, and slightly wider lower collecting channels respectively having their opposite ends fitting in said openings of the lower trough; film plates extending and supported under the upper channels and having lower edges disposed in the collecting channels; means for conducting water to be cooled to the upper trough; and means for conducting water from the lower trough.

Edwards CO-AXIAL CONDENSERS



A TYPICAL CONFIGURATION—EFFICIENT, COMPACT DESIGN

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TT-652
TODAY
or call
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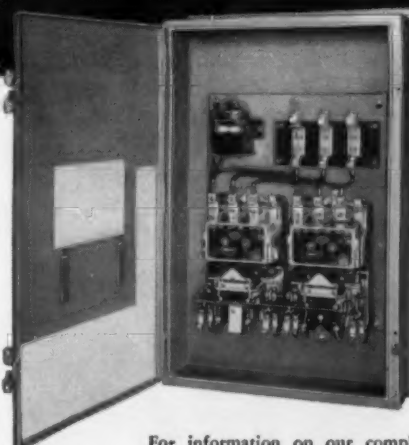
EDWARDS ENGINEERING CORP.
100 ALEXANDER AVENUE • POMPTON PLAINS, NEW JERSEY

The NEWEST design in water-cooled refrigerant condensers. Used by major equipment manufacturers because of these—

SELLING ADVANTAGES:

- Use 35% less water
- Cost reduced 30 to 40%
- Stock sizes: ½ to 7½ tons
- No internal joints
- Easy installation
- Many compact shapes

Specify FURNAS ELECTRIC CONTROLS FOR AIR CONDITIONING AND REFRIGERATION



Objectionable voltage drops are eliminated by using Furnas Electric Increment Starters for Part Winding motor applications. These starters have won particular acceptance for the larger horsepower air conditioning and refrigeration units.

Increment starting incorporates the advantages of other types of step starting AT THE LOWEST COST IN THE SMALLEST SPACE. Select the size you need: 10, 20*, 30, 40*, and 60 hp, 220 volts. There are no expensive auto transformers or resistors.

*Major savings with these "in-between" sizes.

For information on our complete line of air conditioning and refrigeration controls, write for Bulletin 5519. Furnas Electric Company, 1041 McKee Street, Batavia, Illinois.

A21



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BATAVIA, ILLINOIS

SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

We're SPECIALISTS in



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ELECTRIC MOTORS

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WE SAVE YOU MONEY because we're specialists, with the largest selection in the world—over 10,000 items—at lowest prices. They're all illustrated, priced and described in our newest HARRY ALTER DEPENDABOOK—"the standard of the trade."

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Brunner Launches Wholesaler Direct Mail, Ad Push To Strengthen Outlets

UTICA, N. Y.—What is described as "one of the most ambitious manufacturer-wholesaler promotional and advertising campaigns ever launched in the refrigeration-air conditioning industry" is being inaugurated by Brunner Mfg. Co.

Included in this program is Brunner's 1957 advertising campaign tied in with a direct mail campaign for Brunner wholesalers, point of sale "wall banners" for Brunner wholesalers, imprinted envelope stuffers on Brunner's open type and semi-hermetic lines, and large posters for the announcement of new products by wholesalers.

The first of a series of 13 double-page, two-color spreads appears in this issue of AIR CONDITIONING & REFRIGERATION NEWS.

This and other phases of Brunner's 1957 advertising program is aimed to merchandise Brunner equipment through its 186 authorized wholesaler supply depots across the country.

The ads are designed to supplement directly the wholesaler's own sales activity and will list each of the authorized wholesalers geographically by state and city.

Purpose of this program, according to Wallace J. Hoeing, Brunner's general sales manager, is to aid individual wholesalers and to strengthen Brunner's nationwide system of wholesaler organizations.

Timed to coincide with the initial ad, each of the 186 wholesalers will be sent a yellow

and black portfolio which will announce the extensive advertising campaign and the fact that each wholesaler will be named throughout the year in Brunner advertising.

In addition, a ready-made, direct mail campaign will be presented for use by the wholesaler for mailing to his own dealers. This campaign consists of reprints of Brunner ads made up into four-page folders introduced by a letter from the wholesaler on a reproduction of his letterhead.

An impressive two-color 60 by 40-in. wall banner for the wholesaler's show room will tie in at the point of sale. Large decals will be provided for use on the wholesalers' and dealers' windows or trucks.

Temperatures--

(Concluded from Page 1, Col. 4) phrases of our advertising and promotion."

Robert L. Tyler, president of Tyler Refrigeration Corp., told the distributors and packers, "Zero quality won't keep your product. You need -20° F. to do the job right."

Curtis C. Rogers, executive vice president of Market Research Corp., reported that frozen food customers spend approximately 55% more for all of their groceries than average customers.

"A frozen food customer is a very valuable customer for the retailer and is worthy of special consideration," he pointed out.

Rogers said that chain stores account for only 8% of retail outlets with frozen food cabinets but they do 68% of all frozen food sales. Independents

are responsible for 58% of all grocery volume but only 32% of frozen food sales.

He asserted that more than half of all families in the country are now regular frozen food customers. "No retail grocer can afford to be without an adequate line of frozen food products priced competitively," he added.

Whirlpool--

(Concluded from Page 1, Col. 4)

purchased for resale only when sold as a component part of a building, prefabricated or mobile home; and that appliances involved will be completely delivered to the purchaser within six months of the first delivery.

Those defined as special account contract purchasers by the plan are builders of homes and apartment houses; owners and managers of apartments and office buildings; U. S., state, and local government agencies;

manufacturers of prefabricated or mobile homes; motel and hotel operators; dealers, with respect to sales made by them to ultimate buyers in the groups named; and automatic laundries and coin operators.

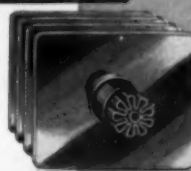
Both appliance dealers and builders are protected by provisions of the plan which effectively preclude sales of appliances at builder prices to anyone not actually engaged in new home construction or operation of multiple dwellings, Anneaux said.

"The special account contract sales plan preserves for the appliance dealer his share of the 'builders' market"—the builder who erects only a few new homes each year and the homeowner who is remodeling—and at the same time makes possible large-volume sales of RCA Whirlpool and Estate appliances to project builders and other large-volume purchasers," Anneaux stated.

The Complete Line... DUNHAM-BUSH ... A BONUS TO REFRIGERATION CONTRACTORS

There's a DUNHAM-BUSH unit for every commercial refrigeration need — high or low temperature. To service engineers and contractors this means a bonus in time saved "shopping" for the right unit... installation time saved by knowing the line... engineering costs shaved with the help of DUNHAM-BUSH Sales Engineers who are always available to assist in selection and application. There's a "peace-of-mind" bonus, also, in knowing that latest design, reliably-rated DUNHAM-BUSH units cut down costly trouble calls.

INNER-FIN



BY BUSH



DUNHAM-BUSH

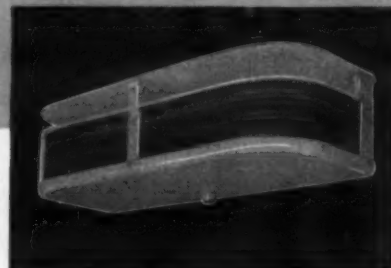
'JF' JET-FLO COOLER

Stainless steel casing. Completely non-ferrous construction throughout. Patented Inner-Fin coil design. Arranged for "suck-through" operation, but supplied with extra fan for "blow-through" arrangement. Units can be wall or ceiling mounted.

DUNHAM-BUSH

'WJ' UNIT COOLERS

For space-saving installation at juncture of wall and ceiling. Air circulation through 180° radius with no blast.



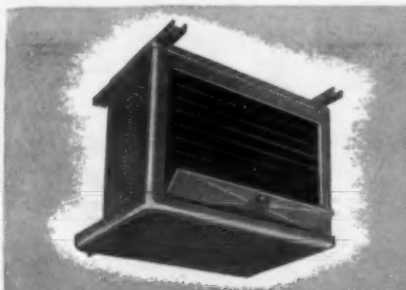
DUNHAM-BUSH

PLASTI-COOLERS

Jet black plastic baffles eliminate sweating. Baffles pitched for gentle, gravity-type air flow that provides maximum circulation without blast.

FIN COILS

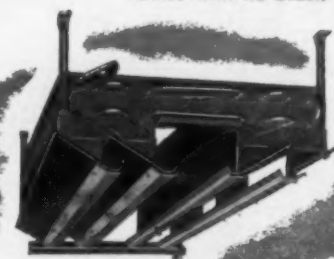
Wide range of types and sizes to meet diverse requirements. Aluminum fins on copper tubing. Copper Inner-Fins.



'HG' HOT GAS DEFROST UNITS

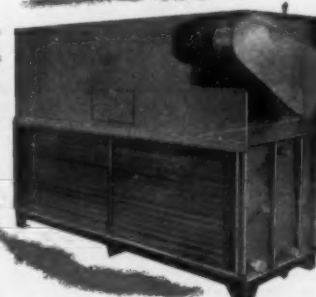
'ED' ELECTRIC DEFROST UNITS

Inner-Fin coil construction permits rapid defrosting from the inside. No reboilers, complicated piping, other "extras".



'UC' STANDARD UNIT COOLERS

Ten models to meet any application need. Aluminum fins on copper tubing. Slotted hangers for quick installation.



'GD' GLYCOL DEFROST UNITS

Product coolers featuring Inner-Fin coils that permit entirely separate defrosting circuit. Available in floor or ceiling models. Assembled defrost circuit kit supplied.

Builders Show--

(Concluded from Page 1, Col. 5)

B.t.u. Use of interchangeable coils and condensers make it possible to tailor units to individual home requirements.

Extensive color styling through four available color panels take the units out of the "iron box" concept.

The third is a flush fitting wall-mounted self-contained room air conditioner that contains a heat convactor which connects to steam or hot water pipes to provide heating. It is also being shown by Westinghouse Electric Corp.

The builders' show started Sunday, Jan. 20 and continues through Thursday, Jan. 24.

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- LOWEST IN PRICE

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